

NOTES ON THE GENUS CLERODENDRUM (VERBENACEAE). XXXV

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CLERODENDRUM Burm.

Additional bibliography: Jack, Journ. Bot. Brit. 1: 39. 1834; Jack in Trübner, Orient. Ser., ser. 2, 1: 217. 1887; Mold., Phytologia 62: 308--338. 1987.

CLERODENDRUM MYRICOIDES (Hochst.) R. Br.

Additional bibliography: Mold., Phytologia 62: 328--338. 1987.

Gibbs (1974) reports that the Ehrlich test, applied to material (a leaf extract) of this species, yielded positive (blue-green) results, leucoanthocyanin and cyanogenesis were not present in the foliage, the HCl/methanol test gave negative results, and syringin was only doubtfully present in the stems.

Among errors involving this species it may be pointed out that the Gürke (1893) reference is often mis-cited as "1894", the titlepage date, and, similarly, the DeWildeman (1913) reference is sometimes cited as "1912", again the titlepage date. The label accompanying the Missouri Botanical Garden photographs of *C. myricoides* seem to regard Salt s.n. and Pearce s.n., in the British Museum herbarium as type collections, but the actual type collection of the species is Schimper 330 from Mt. Scholoda, Ethiopia, collected on October 10, 1839. *Cyclonema myricoides* ♀ *sylvaticum* is based on Krauss 333 and *C. serratum* on Krauss 335, both from woods near the Umlaas River in Natal, also collected in October of 1839.

*Clerodendron myricoides* var. *glabra* Schweinf. is based on Steudner 1310 & 1311 from "Simen, am Ghaja und Wöchni", Ethiopia, deposited in the Berlin herbarium, probably now destroyed. Engler (1892) calls the species a "Dauerblätt. Strauch -- Auch in Natal". The *C. myricoides* var. *cuneatum* of H. H. W. Pearson is a synonym of what is now known as *Clerodendron cuneiforme* Mold., which see; *Clerodendron myricoides* var. *attenuatum* DeWild. is now regarded as a synonym of *Clerodendrum quadrangulatum* Thomas; *Clerodendron myricoides* var. *discolor* (Klotzsch) Baker is a synonym of *Clerodendrum discolor* (Klotzsch) Vatke; and *Clerodendron myricoides* var. *floribundum* Baker is a synonym of *Clerodendrum alatum* var. *floribundum* (J. G. Baker) Mold., which see. Also, *Clerodendron myricoides* var. *neumayeri* (Vatke) Chedeville is a synonym of *Clerodendrum neumayeri* Vatke. Baker (1900) tells us that, in his opinion, Vatke's *C. neumayeri* may actually be "only a shrubby montane variety of *C. myricoides*".

Thomas (1936) furnishes a key to the members of the Subgenus *Cyclonema* known to him from Africa. This key, with mostly non-contrasting characters, somewhat modified by me, is given herewith. I should again say here that, because of the rather numerous and rather distinct combination of characters, differing from those of the rest of *Clerodendrum*, I feel that *Cyclonema* really deserves generic status.

1. Calyx-lobes sharp-pointed; cymes axillary. Section *Pleurocymosa* Thomas.
2. Cymes mostly 1-flowered; leafblades round, marginally entire, short-petiolate; stamens glabrous or subglabrous within the corolla-tube.....*C. pilosum*.
- 2a. Cymes mostly 3-flowered; leafblades elongate, sessile or basally attenuate into the very short petiole; stamens hairy within the corolla-tube.
3. Leaves opposite, the blades marginally dentate; style equal to or shorter than the stamens.....*C. caeruleum*.
- 3a. Leaves whorled, the blades marginally entire; style longer than the stamens.
4. Calyx externally glabrous, lobed to  $\frac{1}{2}$  its length, the lobes lanceolate; ovary glabrous; leaves more or less appressed, glabrous or nearly so.....*C. triphyllum*.
- 4a. Calyx externally hairy, lobed to  $\frac{1}{3}$  its length, the lobes broadly ovate; ovary externally hairy; leaves somewhat spreading, hairy.....*C. triphyllum* var. *ciliatum*.
- 1a. Calyx-lobes rounded; cymes aggregated into a terminal panicle.
5. Panicles more or less foliose, loosely branched.
6. Calyx-lobes narrowly elongate, about 4 mm. long, hairy within; corolla-tube about 1.2 cm. long. Section *Oligocymosa* Thomas.....*C. kanichi*.
- 6a. Calyx-lobes semicircular to semi-elliptic, about 2 mm. long, glabrous within; corolla-tube 8--10 mm. long. Section *Chaunocymosa* Thomas.
7. Calyx lobed to  $\frac{1}{2}$  its length, shortly semispheric or infundibular-campanulate, often weakly zygomorphic; leaves always opposite.
8. Calyx-lobes erect, more or less appressed to the corolla-tube, never spreading.
9. Calyx-lobes not laterally overlapping, semi-circular or semi-elliptic; ovary 2.5--3 mm. long.
10. Corolla-tube apex hairy; branches and leaves glabrous; stamens subequal; ovary 2 mm. long.....  
*C. scheffleri* var. *mahengianum*.
- 10a. Corolla-tube apex glabrous; branches and leaves somewhat hairy; stamens plainly of 2 lengths with a 5 mm. difference; ovary 3 mm. long.
11. Calyx about 3.5 mm. long; corolla-tube 2 mm. wide, not split; corolla yellowish-white....*C. silvicola*.
- 11a. Calyx about 5 mm. long; corolla-tube 4 mm. wide, split to  $\frac{1}{3}$  its length; corolla blue....*C. caesium*.
- 9a. Calyx-lobes laterally overlapping, broadly ovate; ovary less than 2.5 mm. long.
12. Stamens only slightly surpassing the corolla-mouth (at most by 7.5 mm.).
13. Leafblades narrowly elongate, marginally toothed, very shortly petiolate or sessile; stamens and style equally long.....*C. erectum*.
- 13a. Leafblades rotund-ovate, short-petiolate, margin-

- ally entire or subentire; style far surpassing the stamens.....*C. cabrae*.
- 12a. Stamens surpassing the corolla-mouth by at least 1 cm.
14. Subshrubs; branches squarrose; leafblades rhomboid-obovate, cuneate, marginally very coarsely toothed; petioles basally shortly articulate....*C. cuneiforme*.
- 14a. Shrubs, not squarrose; leafblades elongate, marginally less toothed; petioles not articulate.
15. Branches obtusely angulate to terete; peduncles short; bractlets foliaceous.....*C. schlechteri*.
- 15a. Branches acutely angular; peduncles elongate; bracts small, not foliaceous.....*C. carnosulum*.
- 8a. Calyx-lobes horizontally spreading or sharply reflexed.
16. Herbaceous subshrubs; branches, leaves, and calyx plainly hairy; calyx about 7 mm. long.....*C. suffruticosum*.
- 16a. Shrubs or climbers; leaves glabrous or subglabrous; calyx less than 7 mm. long, glabrous or at most appressed hairy on the venation.
17. Petioles winged; calyx-lobes horizontal or ascending; corolla-tube apex glabrous.....*C. bukobense*.
- 17a. Petioles distinct, not winged; calyx-lobes sharply reflexed; corolla-tube apex appressed-silky-hairy.
18. Stamens plainly of 2 lengths; style distinctly surpassing the stamens; corolla-lobes narrowly elongate; leafblades concolorous.....*C. sansibarense*.
- 18a. Stamens subequal in length; style barely surpassing the stamens; corolla-lobes broad; leafblades not concolorous.....*C. scheffleri*.
- 7a. Calyx lobed to 1/3 its length, patelliform and more or less horizontally spreading, the lobes very broad, often unequal.
19. Leaves distinctly petiolate; entire plant glabrous.....  
*C. violaceum*.
- 19a. Leafblades attenuate into a winged petiole; plants somewhat hairy.....*C. bukobense*.
- 7b. Calyx shallowly crenate or lobed to 1/3 its length, the lobes more or less erect, at most only one spreading or reflexed.
20. Calyx plainly lobed to 1/3 its length or more.
21. Shrubs or trees; leaves petiolate; stamens of 2 lengths.
22. Climbing shrubs; calyx much widened, patelliform, the lobes horizontally spreading.....*C. violaceum*.
- 22a. Erect shrubs or trees; calyx infundibular-campanulate, the lobes appressed or only slightly spreading, only singly reflexed; leaves opposite or whorled.
23. Entire plant brown-hairy; corolla-tube apex brown-hairy; stamens about 4 cm. long.....*C. varium*.
- 23a. Entire plant glabrous or subglabrous; corolla-tube apex glabrous; stamens at most 3 cm. long.
24. Trees; leaves opposite, the blades 2--3 cm. long, marginally subentire.....*C. neumayeri*.
- 24a. Shrubs; leaves whorled, the blades 8--12 cm.

- long, marginally serrate.....*C. dembianense*.
- 22b. Shrubs; calyx campanulate, sometimes with the front lobes horizontally spreading or reflexed; leaves whorled.
25. Calyx upwardly ampliate, hairy, green; leafblades hairy.
26. Corolla-tube about 7 mm. long, blue or green; stamens to 3.5 cm. long; leaves only slightly hairy.  
*C. dekindtii*.
- 26a. Corolla-tube about 1.3 cm. long, red; stamens about 4 cm. long; lower leaf-surface white-tomentose.....*C. tomentellum*.
- 25a. Calyx hardly ampliate, glabrous; leafblades glabrous, sharp-serrate.....*C. dembianense*.
- 21a. Subshrubs, more or less herbaceous; leaves mostly sessile [except *C. mlnzneri*]; stamens subequal.
27. Leaves distinctly petiolate, the blades ovate, curved.  
*C. mlnzneri*.
- 27a. Leaves sessile or subsessile, the blades oblong.
28. Calyx subglabrous [except *C. corbisieri*] or at most with a line of hairs on the largest veins; corolla-tube apex glabrous; calyx-lobes mostly not overlapping, internally glabrous.
29. Stamens at most surpassing the corolla-mouth by 7.5 mm.[when young?]......*C. erectum*.
- 29a. Stamens surpassing the corolla-mouth by more than 1 cm.
30. Stems thick, longitudinally 6-furrowed, round to alate, glabrous or with appressed hairs; leaves ternate; leafblades marginally entire or apically serrate.....*C. alatum*.
- 30a. Stems slender, more or less acutely angular; leafblades irregularly undulate....*C. corbisieri*.
- 28a. Calyx densely hairy, the lobes often laterally overlapping; corolla-tube apex more or less hairy; ovary hairy within.
31. Calyx-lobes somewhat inrolled in the sinuses; inflorescence plainly foliose.....*C. ringoeti*.
- 31a. Calyx-lobes not inrolled, sometimes laterally overlapping; inflorescence sparsely foliose.
32. Leafblades marginally coarsely serrate toward the apex; stems thick, to 1 m. tall, unbranched..  
*C. luembense*.
- 32a. Leafblades marginally subentire; stems slender, to 40 cm. tall, branched.....*C. prittwitzii*.
- 20a. Calyx lobed at most to 1/3 its length, mostly less; leaves (especially the lower surface) and branches densely hairy, almost tomentose; calyx-lobes not spreading.
33. Herbaceous subshrubs; calyx glabrous or subglabrous; leaves long-petiolate.....*C. phlebodes*.
- 33a. Woody shrubs; calyx more or less densely hairy; leaves



- very short-petiolate.
34. Branches few-flowered.
35. Calyx often very small, to 2 mm. long, subglabrous; leafblades sharply serrate, sparingly hairy on the upper surface.....*C. discolor* var. *dummeri*.
- 35a. Calyx about 4 mm. long, pubescent; leaves whorled.  
*C. discolor*.
- 35b. Calyx about 4 mm. long; leaves opposite.
36. Individual cymes many-flowered.....  
*C. discolor* var. *oppositifolium*.
- 36a. Individual cymes 1- or 2-flowered.....  
*C. discolor* var. *crenatum*.
- 35c. Calyx about 6 mm. long; calyx and corolla-tube densely hairy.....*C. discolor* var. *kilimandscharense*.
- 34a. Branches many-flowered, 6-angular. with longitudinal ridges, subglabrous; leafblades marginally subentire.....  
*C. discolor* var. *pluriflorum*.
- 20b. Calyx shallowly undulate to lobed to 1/3 its length; leaves and branches only slightly hairy to glabrous; calyx campanulate, the lobes more or less appressed; stamens always of 2 lengths.
37. Leaves short-petiolate [except *C. quadrangulatum*], about 1½ to 2½ times as long as wide, ovate-elliptic.
38. Leaves whorled; shrubs squarrose.
39. Calyx-lobes narrow, roundish-acute, with round sinuses.....*C. myricoides* var. *niansanum*.
- 39a. Calyx-lobes broadly ovate, occasionally laterally somewhat overlapping.
40. Leaves small, about 4 cm. long, marginally sparingly serrate; branches ashy-gray; young shoots short.
41. Cymes few-flowered, loose.....*C. myricoides*.
- 41a. Cymes many-flowered, very dense.....  
*C. myricoides* var. *pluriflorum*.
- 40a. Leaves large, to 12 cm. long, marginally more or less sharply serrate; branches brown; young shoots elongate.....*C. myricoides* var. *grosseserratum*.
- 38a. Leaves opposite. branches bluntly or sharply tetragonal, glabrous or weakly woolly, not squarrose.
42. Leafblades basally attenuate into the alate petiole, subglabrous; branches sharply tetragonal; inflorescence foliose.....*C. quadrangulatum*.
- 42a. Leafblades not attenuate into the petiole; petioles not alate; inflorescence not foliose.
43. Branches sharply tetragonal; entire plant very glabrous; inflorescence with elongate sympodia.....  
*C. ugandense*.
- 43a. Branches obtusely tetragonal; branches and leaves weakly tomentose; inflorescence with short sympodia..  
*C. myricoides* var. *camporum*.
- 37a. Leaves sessile, the blades oblong-lanceolate, at least 3 times as long as wide; stems with antrorsely curved or hook-

ed hairs; calyx subglabrous.

44. Ovary small, about 1.6 mm. long, internally hairy; corolla-tube split to  $\frac{1}{2}$  its length; stamens attached at the middle of the corolla-tube.....*C. katangense*.
- 44a. Ovary large, about 2.5 mm. long, internally glabrous; corolla-tube split to  $\frac{1}{2}$  its length; stamens inserted in the upper half of the corolla-tube.....*C. myricoides* var. *camporum*.
- 5a. Panicles not foliose, with much shortened ramifications, almost spicate. Section *Stacheocymosa* Thomas.
45. Woody plants; calyx lobed  $\frac{1}{3}$  to  $\frac{1}{4}$  its length, at most 4 mm. long, the lobes opposite, not overlapping; corolla-tube curved; anthers 2.5 mm. long.....*C. makanjanum*.
- 45a. Bushes or herbaceous shrubs; calyx-lobes  $\frac{1}{3}$  to  $\frac{1}{2}$  its length, more than 5 mm. long, the lobes laterally overlapping; corolla-tube short, erect; anthers 4 mm. long.
46. Stems, leaves, and calyx hairy; inflorescence dense; corolla golden-yellow.....*C. aurantiacum*.
- 46a. Stems, leaves, & calyx glabrous; inflorescence few-flowered; corollas bluish-violet.....*C. kissakense*.

Baker (1900) distinguishes the *Cyclonema* species known to him at that time by the following key, somewhat modified by me:

1. Cymes lax.
2. Corolla-tube very short, less than 8 mm. long
3. Leaves sessile or very short-petiolate.
4. Stems not winged.....*C. myricoides*.
- 4a. Stems winged.....*C. alatum*.
- 3a. Leaves definitely short-petiolate.
5. Leafblades small, marginally dentate.....*C. neumayeri*.
- 5a. Leafblades large, marginally entire.....*C. violaceum*.
- 2a. Corolla-tube 8--12 mm. long.....*C. bukobense*.
- 2b. Corolla-tube 12--18 mm. long.
6. Leaves sessile.....*C. ternatum*.
- 6a. Leaves distinctly petiolate....*C. ternatum* var. *lanceolatum*.
- 1a. Cymes dense.....*C. aurantiacum*.

Pearson (1901) distinguishes the species of Subgenus known to him from South Africa as follows (with modifications by me):

1. Cymes axillary.
2. Leafblades marginally entire.
3. Unarmed shrubs.
4. Whole plant glabrous [very rarely more or less hirsute]; leafblades profusely and minutely gland-dotted beneath.....*C. triphyllum*.
- 4a. Leaves and branches regularly hirsute; leafblades with only a few relatively large sessile black glands beneath.....*C. triphyllum* var. *ciliatum*.
- 3a. Shrubs with spinose branches.....*Kalaharia uncinata*.
- 2a. Leafblades marginally dentate.....*C. caeruleum*.
- 1a. Cymes long-pedunculate, terminal or clustered at the ends of short, leafy, axillary branches.....*C. myricoides*.
- 1b. Cymes forming a distinct terminal panicle.
5. Leaves and branches puberulent or pubescent, the leaves covered



3. Foglie obovate, peloso-irsute, specialm. sui nervi; calici irto-pubescenti; fiori piu piccoli; mensa tra Rora Ualicauèed Ham-Ham a 1800--2060 m.....  $\gamma$  *sylvaticum*.  
 3a. Rami, peduncoli, picciuoli e foglie di sotto irto-tomentose; foglie oblunghe; calici pubescenti; qua e la; Assaorta, Hamasen e Mensa.....  $\delta$  *discolor*.

Other keys to help distinguish *C. myricoides* from other African taxa will be found under *C. discolor* (Klotzsch) Vatke and from other Madagascar taxa under *C. baronianum* Oliv. in the present series of notes [59: 259--260; 58: 184--190].

For *Clerodendrum myricoides* Baker (1900) cites from Nigeria - Rowland s.n.; from Eritrea - Beccari 296, Schweinfurth 41, and Schweinfurth & Riva 1518; from Ethiopia - Plowden s.n., Roth 469, 470, & 471, Schimper 330 & 1140, and Steudner 1311; from Uganda - Petherick s.n., Schweinfurth 1892, and Scott-Elliot 6192, 6684, 7141, & 7927; from Angola - Marques 10, Monteiro s.n., and Welwitsch 5699, 5703, 5704, 5707, & 5725; from Zaire - Johnston s.n.; from Tanganyika - Hannington s.n., Kirk s.n., and Speke & Grant 203 s.n.; from Mozambique - Kirk s.n.; from Malawi - Scott-Elliot 8589, Waller s.n., and Whyte 83, 99, & s.n.

Pearson (1901) cites only Natal material for what he regarded as typical *C. myricoides*, viz., Gerrard 21 & 382, Gerrard & McKen 798, Gueinzus s.n., Krauss 333 & 335, Sanderson 718, Mrs. K. Saunders s.n., and Wood 657. The two Krauss collections are cited by Schauer (1847) as var. *sylvaticum* -- they are the original collections of *Cyclonema sylvaticum* and *C. serratum* of Hochstetter. Moore (1915) cites Gossweiler 260 & 540 from Angola.

DeWildeman (1912) cites Brixhe 58, Renier s.n., and Vanderyst s.n. from Zaire; Schumann (1900) lists the species for Ethiopia, Angola, and Upper Guinea; Hiern (1900) lists it from Loanda (Angola). Moore (1911) cites Swynnerton 173, 1295, 1296, 1297, 2005, & 6089 and gives the species' overall distribution, as known to him, as "Tropical Africa, Natal, Transvaal".

Vatke (1882) cites Beccari 76 & 296 from Ethiopia; Cufodontis (1962) cites Kuls 265; Drar (1970) cites his nos. 377, 519, & 1404 from Egypt. Fries (1916) cites his no. 457 from Zambia, giving the species' overall distribution as "tropical East Africa to Natal"; Astle (1968) cites Astle 3356, also from Zambia. Moll (1968) cites his no. 1839 from Natal; Richards & Morony (1969) cite their no. 29, Siame 542, and White 3677 from Mbala.

Almagia (1903) cites Schimper 330 & 1140, Salt 1518, Pirotta 11, 266, 365, 612, 1450, 2006, & 2458, and Ragazzi 265 from Eritrea and Pirotti 783 as what he calls var. *sylvaticum*, also from Eritrea. Schweinfurth (1867) cites only unnumbered Cienkowsky and Schimper collections from Ethiopia. Innamorati (1973) cites Daroli 52 from Kenya, while Van der Schijff (1969) cites his nos. 329, 494, 1286, & 2433 from Kruger National Park. Engler (1892) cites Schimper 330, 451, 1140, 1309, & s.n. and Steudner 1308 from Ethiopia and Johnston s.n. from Uganda. Robyns (1947) cites Bequaert 4113 from Zaire, remarking that the species is a "very polymorphic shrub 2--4 m. tall. inhabiting savannas from Ethiopia to tropical central, east, and

south Africa.

Good & Exell (193) cite *Gossweiler* 251 & 5077 from "here and there in open thickets" in Angola, noting that it is "Widespread in Tropical and South Africa".

Thomas (1936) cites for his var. *eumyricoides*: *Ellenbeck* 372, *Petit s.n.*, and *Schimper* 34, 1140, 1839, 1840, 1841, & 1842 from Ethiopia, *Beccari* 76 and *Steudner* 1310 from Eritrea, *Ellenbeck* 298 from British Somaliland (Somalia), *Hildebrandt* 2729 from Kenya, *Schweinfurth* 2347 & 3225 from the Sudan; and *Welwitsch* 5704 from Angola.

Material of *Clerodendrum myricoides* has been misidentified and distributed in some herbaria as "*C. bucobense* Gürke" and as *C. myricoides* var. *floribundum* Baker.

On the other hand, the *Repton* 1184, distributed as *C. myricoides*, actually is *C. caeruleum* N. E. Br., while *Elliot* 422 is *C. dekindtii*; *Gürke*, *Baum* 386 and *Pole-Evans* 415744 are *C. dekindtii* var. *dinteri* Thomas, *Ash* 2947, *Dyson-Hudson* 233, *Kassas* 632, *Lucas* 191, *Maas-Geesteranus* 5203, *Michaël* 728 & 729 [99], *Newbould* 3523, *Piemeisel* & *Kephart* 78, *Schweinfurth* & *Riva* 1055, *Stone* 7937, *Tanner* 3291, 3831, & 4806, and *Troupin* 6011 are *C. discolor* (Klotzsch) *Vatke*, *Schlieben* 7709 is *C. discolor* var. *crenatum* Thomas, *Leippert* 5228, *Rauh* 343, and *Robinson* 23749 are *C. discolor* var. *dummeri* Thomas, *Fries* & *Fries* 2749 and *Robinson* 4805 are *C. discolor* var. *kilimandscharense* Thomas, *Borin s.n.*, *Bullock* 2228, *Goldsmith* 101/61, *Krauss s.n.* [Oct. '39], *Leach* 11286, *H.G.M.* 2634, *Norman* S.17, *Reekmans* 2047, *Richards* 27074, *Shabani* 884, *Tanner* 1208, and *Troupin* 8653 are *C. discolor* var. *oppositifolium* Thomas, *Perdue* & *Kibuwa* 8136 is *C. discolor* var. *pluriflorum* Gürke, *Mendonça* 1365 is *C. faulkneri* Mold., *Phillips* 2249 is *C. milne-redheadi* Mold., *Bullock* 2229, *Earthy* 1, *Faulkner* 3265, *Mendonça* 4033, *Peter* 31416, *Strey* & *Moll* 3834, and *Torre* 4975 are *C. myricoides* var. *camporum* Gürke, *Mearns* 207, 329, 380, 500, & 1101 are *Tanner* 4197 are *C. myricoides* var. *chartaceum* [or *C. ugandense* Prain], *Bainbridge* 635, *Burger* 849, *Drar* & *Mahdi* 377, 519, & 1404, *Kassas*, *Mobaral*, & *Omar* 119, 582, & 1051, *Mearns* 339, and *Pappi* 4203 are *C. myricoides* var. *grosseserratum* Gürke, *Robinson* 3848 and *Tanner* 4541 & 4723 are *C. myricoides* var. *niansanum* Thomas, *Stolz* 655 & 677 are *C. quadrangulatum* var. *rec-linans* Thomas, *Herb. Amani* 423 and *Warnecke* 423 are *C. scheffleri* Gürke, *Schlieben* 2147 is *C. scheffleri* var. *mahengianum* Thomas, *Klawe s.n.* [San Diego, Feb. 12, 1961] and *Reekmans* 3002 are *C. ugandense* Prain, *Kassas*, *Mobarak*, & *Omar* 582 in part & 1145 are *Premna resinosa* (Hochst.) Schau., *Peter* 45586 is *Schrebera trichoclada* Welw., and *Tannder* R.T.3781 [at least in the Bailey Herbarium] is not verbenaceous.

Citations: ERITREA: *Pappi* 4652 (S); *Schweinfurth* & *Riva* 1518 (L). ETHIOPIA: *Burger* 1884 (W--2481004), 3066a (W--2481130); *Eriksson* 632 (S); *Hildebrandt* 633 (L); *McLaughlin s.n.* (Af); *F. G. Meyer* 7613 (W--2519954); *Pearce s.n.* (Go--photo, W--photo); *Salt s.n.* (Go--photo, W--photo); *Schimper* 34 (Ld--photo, N--fragment & photo, Na--8380), 330 (L--isotype, Ld--photo of isotype, Mu--872--isotype, Mu--isotype, N--photo of type, S--isotype), 1140 (L), 1839 (L, L, Ld--



photo, N--photo); Steudner 1309 (L), 1311 (L). ZAIRE: Blommaert 251 (Br); Ghesquiere 3614 (Br); Liben 1099 (E--2168591); Seret 2705 (Br). TANZANIA: Tanganyika: Kant s.n. [Peter 51874] (B); Peter 31361 [V.48] (B). KENYA: Bogdan B.48 (Ca--943443); H. M. Gardner s.n. [Coryndon Mus. 18574] (S); Linsen & Giesen 16 (W--2909747); Lucas 103 (S); Maas-Geesteranus 5203 (Ca--92335, S, W--2247095); Mearns 339 (Br); Strid 2131 (Go), 2509 (Go). ANGOLA: Malange: Exell & Mendonça 87 (U1). ZAMBIA: C. E. F. Allen 368 (Af). ZIMBABWE: R. B. Drummond 5046 (S); Eyles 3187 (K). SOUTH AFRICA: Transvaal: Smuts & Gillett 3397 (Af); Watt & Brandwijk 2154 (Af). MADAGASCAR: Warburg 553 (K). CULTIVATED: Connecticut: Logee s.n. [H. N. Moldenke 10693] (N). Dominican Republic: Feucht 82 (N). England: Herb. Hort. Kew. s.n. (K). Russia: Regel s.n. [Hort. Bot. Petrop. 82.3] (L). MOUNTED ILLUSTRATIONS: Blundell, Wild Fls. Kenya pl. 44, fig. 285. 1982 (Ld); Burger, Fam. Flow. Pl. 198, fig. 60. 1967 (Ld); Hook. f., Curtis Bot. Mag. 96: pl. 5838. 1870 (Ld, Z); Missouri Bot. Gard. photo A.838 (Ld); Moriarty, Wild Fls. Malawi 139. 1975 (Ld); Palmer & Pitman, Trees South. Afr. 3: 1966 & 1967. 1972. (Ld).

*CLERODENDRUM MYRICOIDES* var. *CAMPORUM* Gürke, Engl. Bot. Jahrb. 28: 299 [as "*Clerodendron*"]. 1900; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 87 in syn. 1936.

Synonymy: *Clerodendron myricoides* var. *laxum* Gürke, Engl. Bot. Jahrb. 28: 299. 1900. *Clerodendron myricoides* var. *camporum* Gürke, Engl. Bot. Jahrb. 28: 299. 1900. *Clerodendron myricoides* var. *herbacea* Hiern, Cat. Afr. Pl. Welw. 4: 845. 1900. *Siphonanthus myricoides* var. *herbacea* Hiern, Cat. Afr. Pl. Welw. 4: 845. 1900. *Clerodendron savanorum* DeWild., Bull. Jard. Bot. Brux. 7: 183. 1920. *Clerodendrum myricoides* var. *savanorum* (DeWild.) Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 87. 1936. *Clerodendrum myricoides* var. *laxum* Gürke apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 87 in syn. 1936. *Clerodendrum myricoides* var. *herbacea* Hiern apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 87 in syn. 1936. *Clerodendrum savanorum* DeWild. apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 87 in syn. 1936.

Bibliography: Gürke, Engl. Bot. Jahrb. 28: 299--300 & 304. 1900; Hiern, Cat. Afr. Pl. Welw. 4: 845. 1900; DeWild., Ann. Mus. Cong. Belg., ser. 9, 1: 120. 1903; DeWild., Ann. Mus. Cong. Bot., ser. 5, 3: 134--135. 1909; DeWild., Bull. Roy. Soc. Bot. Belg. 51 (3) [ser. 2, 1] 188. 1913; DeWild., Bull. Jard. Bot. Brux. 7: 183. 1920; De Wild., Pl. Bequaert. 2: 266--267 & 270. 1922; Fedde & Schust., Justs Bot. Jahresber. 48 (1): 497. (1927) and 53 (1): 1072. 1932; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 17, 48, 86, 87, & 95. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 48, 50, & 90. 1942; Glover, Prov. Check List Brit. Ital. Somal. 267. 1947; Robyns, Fl. Sperm. Parc Natl. Albert 2: 138. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 115, 118, & 182. 1949; Mold., Résumé 141, 144, 146, 148, 150, 153, & 451. 1959; Mold., Résumé Suppl. 12: 6 (1965), 13: 4 (1966), and 15: 7. 1967; Mold., Fifth Summ. 1: 229, 232, 236, 239, 242, 247, 251, 256, 359, 451, 454, 464, & 465 (1971) and 2: 869. 1971; Lewalle, Bull. Jard. Nat. Belg. 42 [Trav. Univ. Off. Bu-



jumb. Fac. Sci. C.20]: [230]. 1972; Mold., Phytologia 28: 442. 1974; Mold., Phytol. Mem. 2: 219, 222, 223, 225, 229, 232, 235, 237, 240, 245, 350, & 540. 1980; Mold., Phytologia 58: 332, 357, & 442 (1985), 59: 248, 261, & 350 (1986), and 62: 324 & 337. 1987.

This variety is said to differ from the typical form of the species and all other named varieties in having the calyx-lobes with acute sinuses, the anthers short (only 1--2 mm. long), the calyx in anthesis more than 2 mm. long, the branches bluntly tetragonal, the leaves decussate-opposite, and in being mostly low shrubs, to 30 cm. or more tall. Other varieties have some of these characters, but not all in concordance.

Gürke's original description of the variety (1900) is merely: "foliis 6--8 cm. longis, puberulis vel glabrescentibus, margine obsolete serratis, subtus canescentibus, subcoriaceis...die Behaarung ist stets eine schwache und auffallen ist die mehr oder weniger stark ausgeprägte grauweiße Färbung der Blattunterseite; der Rand ist meist schwach gesägt; ihrem ganzen Habitus nach scheinen die Exemplare trockenen Steppengebieten zu entstammen." He separates his var. *laxum* by saying that "Den Gegensatz dazu bilden westafrikanische Exemplare mit meist grossen, dünnhäutigen, ganz kahlen Blätter, die alle offenbar feuchteren Standorten und wahrscheinlich meist dem Walde oder dichterem Busch entstammen; der Rand der Blätter ist meist mit wenigen unregelmässigen Sägezähnen versehen." Thomas (1936), DeWildeman (1922), and Glover (1947) all regard the two varieties as synonymous.

DeWildeman (1922) describes the variety here under discussion (as a species, *C. savanorum*) as follows: "Arbuste à rameaux jeunes très légèrement pubescents, devenant rapidement glabres, obscurément quadrangulaires; feuilles papyracées, opposées ou verticillées, glabres sur la face supérieure à l'état adulte comme sur la face inférieure, parfois quelques poils sur les nervures et au bord du limbe surtout à l'état jeune, plus ou moins rétrécies en pétiole, à pétiole atteignant 1 cm. de long, articulé à la base; limbe de 3--8 cm. de long et 1,5--4 cm. de large, cunéiforme à la base, cunéiforme et aigu-apiculé au sommet, à borde irrégulièrement denticulés; feuilles supérieures passant aux bractées florales; nervures principales latérales au nombre de 5--6 de chaque côté de la nervure médiane; inflorescences axillaires terminant la tige et ses ramifications, inflorescences partielles pédonculées, ramifiées dichotomiquement, pauciflores, à rachis et ramifications glabres; fleurs pedicellées, à pédicelle glabre de 3--10 mm. de long, bibractéolé, à bractéoles lineaires, glabres ou légèrement ciliées; calice plus ou moins campanulé, glabre, de 3--4 mm. de long, à 5 dents courtes arrondies; corolle à tube de 7 mm. environ de long, élargi vers le sommet, à 5 lobes, le plus long atteignant environ 8--9 mm. fruits nucules noirs mesurant en diamètre environ 10 mm. et 8 mm. de haut.

"Observations. -- Il y a lieu de faire remarquer que l'on pourrait peut-être subdiviser les plantes qui forment cette espèce en plusieurs groupes, mais il faudrait pour cela en posséder une grande série d'exemplaires. On pourrait peut-être trouver des caractères dans la disposition des feuilles: opposées ou verticillées, dans

leur coloration, dans la forme des dentetures, mais nous n'oserions poursuivre cet examen, car il faudrait au préalable démontrer que les caractères tirés de ces organes sont fixes; ou, le premier, au moins, ne paraît pas devoir être dans ce cas. Il y a là en tous cas, semble-t-il, des séries de formes locales qui sont, sans aucun douts, en rapport avec les conditions du milieu."

Gürke also notes that his *C. silvicola* is very closely related, differing "durch ihre Bekleidung mit gelbbraunen, gegliederten Haaren, der gesägten Rand der Blätter und durch die etwas längeren, schmälere und spitzere Kelchzähne". He also notes that *C. violaceum* Gürke is a close relative, differing by its thicker, almost leathery leafblades.

Robyns (1947) asserts that this "Variété de l'Afrique tropicale méridionale, coexistant avec l'espèce dans la plupart des districts de savanes du Congo Belge."

*Clerodendrum myricoides* var. *camporum* is based on *Cabra s.n.* and *Descamps 93* from Zaire and *Buchner 41*, *Blittner 349*, *Mechow 50*, and *Newton 186* from Angola, without any particular one of these collections being designated as the type. Var. *laxum* was based on *Millson 63* and *Rowland s.n.* from Nigeria, *Descamps s.n.* and *Vanderyst s.n.* from Zaire, and *Marques 52* from Angola, as cited by Gürke (1900), who describes the variety as "foliis 6--12 cm longis, glabris, margine integris vel interdum subdentatis, membranaceis, laxis".

Collectors describe *C. myricoides* var. *camporum* as a small or medium-sized bush or bushy and branching shrub, 0.3--3 m. tall, many-stemmed, or a small tree to 8 m. tall, or liana [*vide Bequaert 6851*], the bark smooth, the flowers showy, and the fruit at first green, turning red or coppery-red, shiny, finally brilliant black. They have found it growing in shrubbery, xerophilous or humid forests and forest edges, in dense woods or thick undergrowth, in thickets on old anthills, in coastal bushland, in grassland with *Acacia albida*, on savannas with shrubs and clumps of *Oxytenanthera abyssinica*, and in association with *Colophospermum mopans* and *Spirostachys africana*, at altitudes of 16 to 2400 m., in flower from October to February, as well as in August, and in fruit from October to February, as well as in May, July, and August.

The corollas are described as having been "blue" on *Bequaert 6851*, *Repton 1184*, and *Santos 325*, "bright blue" on *Chase 1953*, "light-blue" on *Peter 33527*, "blue and purple" on *Chase 3710*, "lilac" on *Lemos & Balsinhas 272*, *Monteiro 34*, *Monteiro 34*, *Santos*, & *Murta 60*, "mauve" on *Faulkner 3265*, "pale blue-mauve" on *Richards 18778*, "white" on *Troupin 5551*, "lip blue" on *Torre 4915*, "upper lip blue" on *Mendonça 4659*, "lip blue, other parts green" on *Bullock 2229*, "pale-purple" on *Strey & Moll 3834*, "one lobe violet, rest white" on *Wood 8324*, "blue inside, white outside" on *Santos 231*, and "anterior petal blue, lateral ones lavender" on *Eyles 5586*. *Richards 13925* is said by the collector to represent a "white form", probably implying that the corollas were completely white [as perhaps also on *Troupin 5551*]; the Stockholm sheet of the former collection appears to be a mixture with typical *C. myricoides* (Hochst.) R. Br.

Lewalle (1972) asserts that in Burundi this var. *camporum* grows

from 2000 to 2400 m. altitude. Vernacular names reported for the plant are "bointende", "gengesu", "Iembaponpu", "mufuviya", "mukuzanyana", "putu", and "wontende".

Gerstner reports that this plant is used as tinderwood in the making of fire by drilling in Zululand. Wulf asserts that it seems to be used as a medication for sick cows in Zaire.

Interestingly, Bullock informs us, in speaking of his no. 2229, that it is "avoided by large bees [*Xylocopa?*], more floriferous than no. 2228 [*C. discolor* var. *oppositifolium* Thomas], apparently pollinated by flies; the large bees buzz around the shrub as though smelling it and then go straight away to no. 2228".

*Mendonça 4033* is said to "match" *Swynnerton 2005 & 2008* in the British Museum herbarium. *Gerstner 443* is anomalous in being "a medium-sized tree, not strongly scented", according to the collector.

DeWildeman (1903), adopting the name "*C. myricoides* var. *laxum* Gürke", cites *Verdick 161* from Zaire and comments that "C'est avec certain doute que nous reportons cette plante à la variété *laxum* Gürke, dont nous avons vu, dans l'Herbier du Jardin botanique, des échantillons authentiques par M. Gürke et provenant du Bas-Congo et du Katanga. Les feuilles ne sont en effet, point longuement atténuées à la base, mais bien assez brusquement rétrécies en un court pétiole, elles sont toutes à bords entières; les caractères floraux concordent fort bien avec ceux du type." In his 1909 work he cites *Gillet 3226 & 3991*, *Laurent & Laurent s.n.*, *Lesclauwaet 390*, *Pynaert 270*, and *Seret 705* from Zaire.

Fedde & Schuster (1927) cite *Bequaert 5278 & 5859*, *Blommaert 251*, *Brixhe 58*, *Gillet 3991*, *Vanderyst & Gillet 3226*, and *Verschueren 230* from Zaire. Thomas (1936) cites from Zaire: *Cabra s.n.*; from Angola: *Antunes 338*, *Buchner 41*, *Buttner 349*, *DeKindt 247*, *Marques 52*, *Mechow 50*, and *Welwitsch 5678 & 5700*. Robyns (1947) cites *Bequaert 5278* from Zaire, and *Lewalle (1972) cites Lewalle 2502* from Burundi.

A key to distinguish this variety from Thomas' other varieties of the species will be found under *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 456 & 458].

Material of *C. myricoides* var. *camporum* has been distributed in some herbaria as typical *C. myricoides* (Hochst.) R. Br., *C. discolor* (Klotzsch) Vatke, and *C. discolor* var. *oppositifolium* Thomas. On the other hand, the *Pentz 541*, distributed as *C. myricoides* var. *camporum*, actually is *C. caeruleum* N. E. Br., *Dehn 558* is *C. cuneiforme* Mold., *Descamps 13* is *C. dekindtii* Gürke, *Dehn 558/53* is *C. discolor* var. *oppositifolium* Thomas, *Peter 36374* is *C. erectum* De Wild., and *Schlieben 1587* is *C. scheffleri* var. *mahengianum* Thomas. *Elskens 33* in the Brussels herbarium is a mixture with some leguminous fruit.

Citations: ZAIRE: *Achten 561a* (Br), *566a* (Br); *Bequaert 4113* (Br, N), *5278* (Br), *5859* (Br, N), *6851* (Br); *Brande 506* (Br); *Brixhe 58* (Br); *Butayer s.n.* [Gillet 1832; December 1900] (Br); *Cabra s.n.* [1897] (Br--cotype); *Claessens 15* (Br, Br), *s.n.* [env. de Boma, 1921] (Br, Br, N), *s.n.* [1921] (Br, Br, Br); *Collector undetermined 4987* (Br), *s.n.* [Sept. 1893] (Br); *Dacremont 89* (Br, Br); *Descamps*

s.n. [1895] (Br); *Elskens* 33 in part (Br); *Gillet* 129 (Br), 3141 (Br), 3226 (Br), 3991 (Br), s.n. [1899] (Br), s.n. [Kisantu, Sept. 1900] (Br), s.n. ['09] (Br); *Laurent & Laurent* s.n. [Fevrier 1904] (Br, Br); *Leserawaet* 390 (Br); *Libon* 1099 (S); *Nurkhain* 363 (Br); *Pynaert* 270 (Br); *Renier* s.n. [1910] (Br); *Sapin* s.n. [2/7/1906] (Br), s.n. [Lukomlie, Oct. 1916] (Br), s.n. [Lukomlie, Dec. 1916] (Br); *Scaetta* 930 (Br); *Troupin* 5551 (N); *Vanderyst* 75 (Br), 4832 (Br), 4899 (Br), 8381 (Br), 11046 (Br), 13429 (Br), 26242 (Br), 26493 (Br), 27571 (Br), 27587 (Br, Br), 27591 (Br), 27599 (Br, Br), 27756 (Br), 37268 (Br, Br, Br), s.n. [Yindu, Septembre 1908] (Br), s.n. [Mars '08] (Br), s.n. [Moanda, Mai-Juin] (Br), s.n. (Br); *Verwoeseri* 274 (Br), 1360 (Br, Br), 1380 (Br); *Verschueren* 230 (Br); *Wellens* 11 (Br), 488 (Br); *Wulff* 99 (Br). BURUNDI: *Lewalle* 2502 (Ac, Gz). UGANDA: *Piemeisel & Kephart* 699 (W--1373402). TANZANIA: Tanganyika: *Bullock* 2229 (B, S); *Peter* 31416 [V.49] (B), 33527 [V.104] (B), 33951 [V.112] (B); *Richards* 13925 in part (S); *E. T. Ward* P.15 (Af). Zanzibar: *Faulkner* 3265 (S). ANGOLA: Huila: *R. Santos* 231 (U1). Luanda: *F. A. Mendonça* 4659 (U1); *R. Monteiro* 34 (U1); *Monteiro, Santos, & Murta* 60 (U1), 400 (U1). Lunda: *G. Barbosa* 8803 (U1). Pungo-Andonga: *Meehow* 50 (Br--cotype, Ld--photo of cotype, N--photo of cotype). Province undetermined: *Marques* 52 [Herb. Hort. Then. ser. 3: 260] (Br, Ld--photo, N--photo); *Monteiro* s.n. [Boma, 1873; Herb. Reichenb. f. 14448] (V). ZAMBIA: *Richards* 18778 (E--1836618). ZIMBABWE: *N. C. Chase* 1953 (Rh--27152), 3710 (W--2963771); *Crook* 347 [Govt. Herb. Salisbury 31709] (Bm, Le, N); *Earthy* 1 (Af); *Eyles* 1157 (Mg--158), 5586 (Rh); *Ferras* 4095 (N); *B. S. Fisher* 1122 (Af); *Fries, Norlindh, & Weimarck* 3050 (Mu); *J. C. F. Hopkins* s.n. (Rh--8279). MOZAMBIQUE: Cabo Delgado: *Torre & Paiva* 9747 (U1). Inyamatsira: *N. C. Chase* 4294 (Af--35865). Lourenço Marques: *Lemos & Bal-sinhas* 272 (U1). Manica e Sofala: *F. A. Mendonça* 4033 (U1). Zam-bezia: *Torre* 4975 (Ld, U1). SOUTH AFRICA: Natal: *Gerstner* 4443 (Cb); *Repton* 1184 (Rh); *Rudatis* 1472 (W--633846); *Strey & Moll* 3834 (N); *J. M. Wood* 8324 (W--550020). CULTIVATED: Belgium: *Herb. Hort. Bot. Brux.* s.n. [7.6.1938] (Br). Zimbabwe: *Pardy* s.n. (Rh--27483).

CLERODENDRUM MYRICOIDES var. CHARTACEUM Mold., *Phytologia* 4: 51. 1952.

Bibliography: Mold., *Biol. Abstr.* 26: 1471. 1952; Mold., *Phytologia* 4: 51. 1952; Mold., *Résumé* 141, 143, 146, & 451. 1959; Mold., *Fifth Summ.* 1: 229, 233, & 240 (1971) and 2: 869. 1971; Mold., *Phytol. Mem.* 2: 219, 223, 225, 230, & 540. 1980; *P. Holmgren & al.*, *Ind. Vasc. Pl. Type Microf.* 442. 1985; Mold., *Phytologia* 62: 336. 1987.

This variety differs from the typical form of the species in having its leafblades smaller, mostly 1.5--5 cm. long and 1--2.5 cm. wide, floccose-tomentellous on the larger venation beneath, chartaceous and in general firmer in texture, the margins often subrevolute, and the cymes few-flowered but very abundant in the upper leaf axils on numerous twigs and branchlets.

The variety is based on *Edgar Alexander Mearns* 1101 from the vicinity of Thika, Uganda, at an altitude of about 1350 m., collected

on September 6 or 7, 1909, and deposited in the Britton Herbarium at the New York Botanical Garden.

Collectors describe this plant as a shrub or liana, with woody stems, 4--10 feet tall, the flowers not aromatic. They have found it growing in coppices and among tall grass on hillsides, at 1500--2100 m. altitude, in flower in April, June, September, and December, and in fruit from April to June and in September and November. Rogers describes the flowers as of 2 shades of blue, while Tanner refers to them simply as "blue". Rogers describes the plant as a "conspicuous, slender, branched, free-flowering shrub" of dry open grasslands in Kenya.

It seems very possible to me that this taxon is very close to, or even identical with, *C. ugandense* Prain, which see.

Material has been identified and distributed in herbaria as typical *C. myricoides* R. Br. or as its var. *involutum* Thomas.

Citations: ZAIRE: *Malaisse 6029* (Ld); *Rossignol 212* (Br, Br, Ld--photo, N--photo). UGANDA: *Mearns 1101* (N--type, W--631137--isotype). TANZANIA: Tanganyika: *Tanner 4197* (Ba). KENYA: *Mearns 207* (W--630219), *329* (W--630345), *380* (W--630396), *500* (W--630523); *C. G. Rogers 18* (Br).

*CLERODENDRUM MYRICOIDES* var. *GROSSESERRATUM* Gürke, Engl. Bot. Jahrb. 28: 298--299 [as "*Clerodendron*"]. 1900; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 48 & 86. 1936 [not *C. myricoides* var. *grosseserratum* "Guerke quoad Ruspoli & Riva 1258". 1962].

Synonymy: *Clerodendron myricoides* var. *grosseserratum* Gürke, Engl. Bot. Jahrb. 28: 298. 1900. *Clerodendron myricoides* f. *umbrosum* Fiori, Buschi Pianta Legn. Eritrea [Bibl. Agr. Colon. 7:] 325. 1912. *Clerodendron myricoides* var. *umbrosum* Fiori apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 in syn. 1936. *Clerodendron myricoides* var. *umbrosum* Fiori ex Chiov., Fl. Somal. 2: 362. 1932; Glover, Prov. Check List Brit. Ital. Somal. 267 in syn. 1947. *Clerodendron myricoides* Auct. ex Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 800 in syn. 1962.

Bibliography: Gürke, Engl. Bot. Jahrb. 28: 298--299. 1900; Fiori, Agric. Colon. Ital. 5: Suppl. 101. 1911; Fiori, Buschi Pianta Legn. Eritrea [Bibl. Agr. Colon. 7:] 324. 1912; Chiov., Fl. Somal. 2: 362. 1932; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 14, 16, 48, 86, & 87. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 45, 46, 49, 50, 53, & 90. 1942; Mold., Alph. List Cit. 1: 153. 1946; Glover, Prov. Check. List Brit. Ital. Somal. 267. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 109, 110, 116, 117, 123, & 182. 1949; Mold., Résumé 133--135, 141, 144, 146, 157, 267, & 451. 1959; Dale & Greenway, Kenya Trees 585. 1961; Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 800. 1962; Cuf., Senckenb. Biol. 43: 283. 1962; Mold., Résumé Suppl. 18: 6. 1969; Mold., Fifth Summ. 1: 210--213, 229, 236, 240, 245, 264, & 451 (1971) and 2: 869--870. 1971; Mold., Phytologia 28: 441. 1974; Mold., Phytol. Mem. 2: 201--204, 219, 225, 230, 235, 253, & 540. 1980; Mold., Phytologia 62: 337. 1987.

Gürke (1900) describes this variety as "foliis 6--12 cm longis; puberulis vel glabris, margine grosse serratis, coriaceis" and bases



it on *Schimper 541* from between 2000 and 2300 m. altitude in the hills at Aman-Eski, Ethiopia, collected on November 4, 1854, *Steudner 1311* from Ghaga, collected on January 15, 1862, and on *Ruspoli-Riva 1258* from the Galla uplands, collected on February 3, 1893. Thomas (1936), however, designated on *Ellenbeck 1319* as the type collection -- from 2800 m. altitude at Abinas, Ethiopia, collected on July 10, 1900, while Cufodontis (1962) calls *Schimper 451* (not 541) the "syntype" collection from Aman-Eski -- he also cites a *Kuls 996* from Arussi.

Thomas (1936) differentiates the variety as having brown, round or 6-angled branches, large or medium-sized leaves, the blades to 12 cm. long, coriaceous, more or less shiny, marginally more or less coarsely dentate, only weakly hairy or subglabrous, the inflorescence long and branched, and the corolla-tubes and their apices glabrous.

Collectors refer to this plant as a low, weak-stemmed shrub, 1--5 m. tall, or a tree to 10 m. tall, the leaves subverticillate or ternate, the flower-buds green, and the (immature) fruit shiny-green. They have encountered it in thickets at 50 to 2800 m. altitude, in flower in April to June, September, November, and December, and in fruit in January, June, and September. Burger states that he found it growing in gravelly granitic soil in open woodland in hilly areas with large granite boulders in Ethiopia. Bainbridge, in Zambia, describes it as a "low weak-stemmed shrub to 10 feet tall, stems to 1 in. in diameter at base, with poor thin crown, bark brown, smooth except for prominent lenticels; on forest floor with regenerate herbs, etc. under very high mutemwe (*Popowia*, *Acacia ataxacantha*, *Combretum celastroides*, etc.) under 65-foot tall mature *Baikiaea* with *Pterocarpus antunesii*, the mutemwa species all 10--15, very open, apparently most common in mutemwe that are not subject to heavy fires, on light grey Kalahari sand".

The corollas are said to have been "violet" on *Drar & Mahdi 377* and *Kuls 996* and "mauve" on *Kassas & al. 582*, while on *Bainbridge 635* the collector notes "flowers white, blue tipped petals, sepals pale pink".

A vernacular name recorded for the plant is "maračiša".

Chiovenda (1932) and Thomas (1936) record the variety from Somalia. Thomas (1936) cites from Eritrea - *Schweinfurth 579* and *Troll 4058*, from Ethiopia - *Ellenbeck 1319*, *Schimper 451*, and *Schweinfurth 292 & 1162*, from the Sudan - *Schweinfurth 42 & 1892*, from Uganda - *Whyte s.n.*, and from Tanganyika - *Kandt 136*.

It should be stated here that I am not at all convinced that all of the specimens cited below actually belong here -- more study of a greater series of specimens is clearly required.

Material has mostly been distributed in herbaria as typical *C. muricoides* (Hochst.) R. Br. or as *C. ugandense* Prain.

A key to distinguish the varieties recognized by Thomas will be found under *C. muricoides* (Hochst.) R. Br. in the present series of notes [62: 453--459].

Citations: SUDAN: Red Sea: *Drar & Mahdi 377* (Gz, Gz, Gz, Gz, Gz), 519 (Gz), 1404 (Gz); *Kassas, Mobarak, & Omar 119* (Gz), 582 in part



(Gz, Gz, Gz), 1051 (Gz, Gz, Gz, Gz). ERITREA: *Pappi* 4204 (Ca--994348, N, S, W--1969179); *Schweinfurth & Riva* 1518 (Br, N). ETHIOPIA: *Albers* 62361 (Au); *Burger* 849 (W--2598684); *Schimper* 451 (Na--6829--cotype). ZAIRE: *Lebrun* 9507 (Br). TANZANIA: Tanganyika: *Mwasumbi* 10647 (Ac); *Scheffler* 62 (V). KENYA: *Mearns* 339 (W--630355). ZAMBIA: *Bainbridge* 635 (N). ARABIA: *Deflers* 1027 [38] (Ld--photo, N--fragment & photo, Na--19924).

*CLERODENDRUM MYRICOIDES* var. *INVOLUTUM* Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 88. 1936.

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 88. 1936; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 50 & 90 (1942) and ed. 2, 117 & 182. 1949; Mold., *Résumé* 146 & 451. 1959; Dale & Greenway, *Kenya Trees* 585. 1961; Mold., *Fifth Summ.* 1: 240 (1971) and 2: 870. 1971; Mold., *Phytol. Mem.* 2: 230 & 540. 1980.

This apparently endemic variety differs from the typical and all other forms of the species in the following combination of characters: branches round to 6-angular, the leaves small, sessile, marginally involute.

It is based on *Johnston s.n.* from Nandy, Kenya, collected in 1901, and deposited in the Kew herbarium. Thomas (1936) cites only the original collection.

A key to distinguish the varieties of this species, as known to Thomas, will be found under *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 453--459], which see.

Nothing is known to me of this taxon beyond what is stated in its meager bibliography (above), but it is worth noting that leaves with subrevolute margins have been observed by me in var. *chartaceum* Mold.

*CLERODENDRUM MYRICOIDES* var. *LONGITHECUM* Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 88. 1936.

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 88. 1936; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 49 & 90 (1942) and ed. 2, 116 & 182. 1949; Mold., *Résumé* 144 & 451. 1959; Mold., *Fifth Summ.* 1: 236 (1971) and 2: 870. 1971; Mold., *Phytol. Mem.* 2: 225 & 540. 1980.

This apparently endemic variety differs from the typical and all other known varieties of the species in its elongate anthers, which are about 4 mm. long.

It is based on *Uhlig* 286 from Mt. Kilimanjaro in northern Tanganyika (Tanzania), collected on September 16, 1904, and deposited in the Berlin herbarium, now unfortunately destroyed. Thomas (1936) cites only this original collection and nothing is known to me of the taxon beyond what is stated in its brief bibliography (above).

A key to help distinguish this variety from the other varieties of the species known to Thomas will be found under *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 458].

*CLERODENDRUM MYRICOIDES* var. *MICROPHYLLUM* Gürke, Engl. Bot. Jahrb. 28: 298--299 [as "*Clerodendron*"]. 1900; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 87. 1936.

Synonymy: *Clerodendron myricoides* var. *microphyllum* Gürke, Engl. Bot. Jahrb. 28: 298. 1900.

Bibliography: Gürke, Engl. Bot. Jahrb. 28: 298--299. 1900; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 87. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 45, 50, & 90 (1942) and ed. 2, 110, 118, & 182. 1949; Mold., Résumé 134, 135, 147, & 451. 1959; Mold., Fifth Summ. 1: 211, 213, & 243 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 202, 204, 232, & 540. 1980; Mold., Phytologia 62: 337. 1987.

This variety differs from the typical and all other forms of the species in its calyx being only 2 mm. long; further, Gürke (1900) says "foliis 1--5 mm [sic; error for cm.] longis, puberulis, rarius pubescentibus vel glabris, margine obsolete serratis, subcoriaceis.. Die in den bergigen Gegenden von Abyssinien, meist in Höhen von 1700--2300 m am häufigsten vorkommende Form besitzt kleine Blätter, welche eine Länge von 5 cm nicht überschreiten, aber zuweilen bis auf 1 cm Länge herabgehen; sie sind gewöhnlich fein flaumig behaart, auf der Unterseite dichter; bei einigen Exemplaren fehlt die Behaarung fast ganz, bei anderen wird sie stärker und es sind dabei alle Übergänge zu beobachten; auch zwei Welwitsch'sche Pflanzen aus West-Afrika würden hierher zu zählen sein."

Gürke based the variety on Beccari 76 & 296, Hildebrandt 633, Petit s.n., Schimper 34, I.330, II.1140, & III.1839, and Steudner 1308 & 1309 from Ethiopia and Welwitsch 5700 & 5704 from Angola. Thomas (1936) cites Beccari 296, Hildebrandt 633, and Steudner 1308 & 1309 from Eritrea, Drake-Brockmann 329 from Somalia, and Gossweiler 251 and Jessen 369 & 387 from Angola, designating Gossweiler 251 as the "Typus" --this, however, is not justifiable since any lectotype must be chosen from among the collections originally cited by Gürke.

Collectors have encountered this plant in high mountainous areas, 1500--2300 m. altitude, in flower from May to October. The vernacular name, "surbattri", is recorded for it in Ethiopia.

A key to help distinguish this variety from the other varieties accepted by Thomas (1936) will be found under typical *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 453--459].

Nothing is known to me of this plant beyond what is stated in its brief bibliography (above).

*CLERODENDRUM MYRICOIDES* var. *NIANSANUM* Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 47, 86, & 87. 1936.

Synonymy: *Clerodendron pubescens* Peter ex Mold., Resume 268 in syn. 1959 [not *C. pubescens* Wall., 1843]. *Clerodendron myricoides* var. *nyansanum* Thomas apud Lewalle, Bull. Jard. Bot. Nat. Belg. 42: [230]. 1972.

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 47, 86, & 87. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 48, 49, & 90. 1942; W. Robyns, Fl. Sperm. Parc Natl. Albert 2: 142 & 148. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 115, 116, & 182. 1949; Mold., Résumé 141, 144, 148, 150, 268, & 451. 1959; Mold., Résumé Suppl. 12: 6. 1965; Mold., Fifth Summ. 1: 229, 233,

236, 243, 247, 251, & 453 (1971) and 2: 870. 1971; Lewalle, Bull. Jard. Bot. Nat. Belg. 42 [Trav. Univ. Off Bujumb. Fac. Sci. C.20]: [230]. 1972; Mold., Phytol. Mem. 2: 219, 222, 225, 232, 237, 240, 393, & 540. 1980; Mold., Phytologia 58: 442 (1985) and 59: 261. 1986.

This variety differs from the typical and all other forms of the species in having rounded sinuses between the calyx-lobes.

The variety is based on *Kandt* 91 from 1700 m. altitude at Niansa, western Rwanda, collected in 1906 and deposited in the Berlin herbarium, now regrettably destroyed. Thomas (1936) cites also *Schlieben* 5959 from Tanganyika and *Witte* 1223 from Zaire.

Collectors describe this plant as a "woody herb" or shrub, 0.8--4 m. tall, or caespitose, often growing singly, the stem upright, branched, strong-growing, the sap colorless, the leaves "dry", and the flowers inodorous. They have found it growing in forests and light forests on gravel-loam, on grass steppes and lava plains, in soil with ferrous concretions, and among sclerophyllous plant associations. Lea reports it as "very rare in loose sandy soil of old native lands" in Inhambane (Mozambique). It has been encountered at 100--2200 m. altitude, in flower in January, February, and August to November.

The corollas are described as having been "light-blue" on *Peter* 36662 and *Schlieben* 5959, "pale-blue" on *Tanner* 4541, "violet" on *DeWitte* 1389, "mauve to purple" on *Tanner* 4723, "whitish" on *DeWitte* 1223, "delicate purple & greenish-white" on *Lea* 108, and "blue-violet, the wings wine-blue" on *Lebrun* 6994.

Lewalle (1972) cites *Lewalle* 4049 from Burundi. The variety is said to be "related to *C. alatum* Gürke".

A key to help distinguish this variety from the typical and other forms of the species recognized by Thomas (1936) will be found under typical *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 453--459]. Robyns (1947) distinguishes it from other forms found in the Albert National Park (Zaire) as follows:

1. Sinuses of the calyx-lobes acute.
  2. Leafblades elliptic,  $1\frac{1}{2}$ -- $2\frac{1}{2}$  times longer than wide.....  
*C. myricoides*.
  - 2a. Leafblades lanceolate, about 3 times as long as wide.....  
*C. myricoides* var. *camporum*.
- 1a. Sinuses between the calyx-lobes rounded.....  
*C. myricoides* var. *niansanum*.

Material of *C. myricoides* var. *niansanum* has been identified and distributed in some herbaria as typical *C. myricoides* (Hochst.) R. Br., *C. myricoides* var. *camporum* Gürke, and *C. discolor* (Klotzsch) Vatke. On the other hand, the *Reekmans* 2173 distributed as *C. myricoides* var. *niansanum*, is actually *C. ugandense* Prain.

Citations: ZAIRE: *Claessens* 1964 (Br); *DeWitte* 1223 (Br, Ld--photo, N, N--photo), 1389 (Br); *Lebrun* 6994 (Br); *Louis* 4928 (Br). BURUNDI: *Lewalle* 4049 (Ld), 4313 (Ac). TANZANIA: Tanganyika: *Burt* 3636 (Br, N); *Peter* 36662 [V.151] (B); *Schlieben* 5959 (B, W--2214703); *Tanner* 4541 (Ba, S), 4723 (Ba). ANGOLA: Benguela: *Teixeira & Andrade* 6977 (Ul). ZIMBABWE: *Mrs. J. Borle* 120[3828] (Af);

*E. A. Robinson 3848* (Mu). MOZAMBIQUE: Inhambane: *Lea 108* (Af).

*CLERODENDRUM MYRICOIDES* var. *STOLZEI* Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 88. 1936.

Synonymy: *Clerodendrum myricoides* var. *stolzii* Thomas apud Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 800. 1962. *Clerodendrum myricoides* var. *grosseserratum* Gürke "quoad Ruspoli & Riva 1258" apud Cuf., Bull. Jard. Bot. Brux 32: Suppl. 800 in syn. 1962 [not *C. myricoides* var. *grosseserratum* Gürke, 1900].

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 86 & 88. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 45, 49, & 90. 1942; H. N. & A. L. Mold., Pl. Life 2: 84. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 110, 116, & 182. 1949; Mold., Résumé 135, 144, 149, & 451. 1959; Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 800--801. 1962; Mold., Fifth Summ. 1: 212, 236, 240, & 249 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 203, 226, 230, 239, & 540. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 442. 1985.

According to Thomas (1936) this variety differs from the typical and all other forms of the species in the following combination of characters: branches 6-angular, leaves large, the blades more or less shiny and marginally more or less coarsely serrate, the inflorescence elongate and branched, and the corolla-tube, including its apex, hairy.

The variety is based on *Stolz 317* from along the Rungwe River at Kuimbila, Tanganyika (Tanzania), at 1450 m. altitude, collected on October 3, 1910, and deposited in the Berlin herbarium, now doubtless destroyed. Thomas (1936) cites also *Stolz 48* from Tanganyika and *Ruspoli & Riva 1258* from Ethiopia. Cufodontis (1962) cites only *Stolz 317* and *Ruspoli & Riva 1258*.

Philips describes this plant as a 6-foot shrub with deep-blue "flowers" [corollas] and found it growing in forest edges at 5800 feet altitude.

A key to help distinguish this variety from the other varieties recognized by Thomas (1936) will be found under typical *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 453--459].

Citations: KENYA: F. Wall 54 (Ew). MALAWI: E. Phillips 4648 (Ba--386712); *Stolz 317* (Ld--photo of isotype, N--fragment & photo of isotype, S--isotype).

*CLERODENDRUM MYRTIFOLIUM* Mold., Lloydia 13: 211--212. 1950.

Bibliography: Mold., Lloydia 13: 211--212. 1950; E. J. Salisb., Ind. Kew. Suppl. 11: 56. 1953; Mold. in Humbert, Fl. Madag. 174: 152, 211, 213, & 268, fig. 34 (5). 1956; Mold., Résumé 155 & 451. 1959; Mold., Fifth Summ. 1: 260 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 249 & 540. 1980; P. Holmgren & al., Ind. Vasc. Pl. Type Microf. 442. 1985; Mold., Phytologia 58: 188. 1985.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 211, fig. 34 (5). 1956.

A shrub, 4--6 m. tall, much-branched; branches short; branchlets and twigs very slender, obtusely tetragonal, light-brownish or gray-

ish, minutely puberulent on the younger parts, glabrescent in age, the youngest parts often rather acutely tetragonal and sulcate, lenticellate; nodes not annulate; principal internodes much abbreviated, mostly 5--15 mm. long, sometimes elongate to 6.6 cm; leaves decussate-opposite, abundant; petioles very slender, 2--5 mm. long, minutely puberulent, reddish; leafblades chartaceous, elliptic or sometimes subrotund, bright-green on both surfaces, very shiny (especially above), 2.3--3.8 cm. long, 1.2--2.1 cm. wide, apically obtuse or rounded, rarely emarginate, marginally entire, basally acute, glabrous on both surfaces, densely impressed-punctate beneath; midrib very slender, flat above, prominulous beneath; secondaries filiform, 3 or 4 per side, flat above, very slightly subprominulous beneath, arcuate-ascending, anastomosing in loops at the margins beneath; veinlet reticulation indiscernible on both surfaces; inflorescence axillary in the uppermost leaf-axils or terminal, 1--3-flowered, more or less drooping; peduncles filiform, 0.5--2 cm. long, microscopically puberulent, nigrescent; pedicels filiform, 3--7 mm. long, microscopically puberulent, usually with a pair of setaceous bractlets; calyx campanulate, chartaceous, 1.4--1.7 cm. long, 9--11 mm. wide, subglabrous, 5-ribbed, the rim 5-lobed, the lobes triangular-ovate, 3--4 mm. long, apically acute, erect; corolla red-violet, infundibular, about 3.5 cm. long in all, the tube infundibular, externally microscopically scattered-puberulent or pulverulent to glabrescent, the lobes 8--9 mm. long, more or less erect; stamens and style equaling the corolla-limb or slightly shorter; fruiting-calyx and fruit not known.

This endemic species is based on *Perrier 10209* from woods, at 700 m. altitude, at Anlamujitro, Madagascar, collected in April of 1907 and deposited in the Paris herbarium. Thus far it is known to me only from the original collection. A key to help distinguish it from other Madagascar taxa in this genus will be found under *C. baronianum* Oliv. in the present series of notes [58: 184--190].

Citations: MADAGASCAR: *Perrier 10209* (E--photo of type, F--photo of type, Ld--photo of type, N--isotype, N--photo of type, P--type).

*CLERODENDRUM NEUMAYERI* Vatke, *Linnaea* 43: 535-536 [as "*Clerodendron*"]. 1882; B. Thomas, *Engl. Bot. Jahrb.* 68: [Gatt. *Clerod.*] 46, 82, & 94. 1936.

Synonymy: *Clerodendron neumayeri* Vatke, *Linnaea* 43: 535. 1882. *Siphonanthus neumayeri* (Vatke) Hiern, *Cat. Afr. Pl. Welw.* 1: 847. 1900. *Clerodendrum myricoides* var. *neumayeri* (Vatke) Chédeville ex Cuf., *Bull. Jard. Bot. Brux.* 32: Suppl. 801 in syn. 1962.

Bibliography: Vatke, *Linnaea* 43: 535--536. 1882; Engl., *Hochgebirgsfl. Trop. Afr.* 357. 1892; Jacks. in *Hook. f. & Jacks., Ind. Kew.*, imp. 1, 1: 561. 1893; J. G. Baker in *Thiselt.-Dyer, Fl. Trop. Afr.* 5: 295 & 311. 1900; Hiern, *Cat. Afr. Pl. Welw.* 1: 847. 1900; Crowfoot, *Pl. North. Cent. Sudan* pl. 149, fig. 2. 1928; Chiov., *Fl. Somalia* 1: 49. 1929; Worsdell, *Ind. Lond. Suppl.* 1: 238. 1931; B. Thomas, *Engl. Bot. Jahrb.* 68: [Gatt. *Clerod.*] 46, 82, & 84. 1936; Wangerin, *Justs Bot. Jahresber.* 56 (1): 668. 1936; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 45, 46, & 90. 1942; Jacks. in *Hook.*



f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Glover, Prov. Check List Brit. Ital. Somal. 267. 1947; Mold., Alph. List Cit. 2: 537. 1948; H. N. & A. L. Mold., Pl. Life 2: 74. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 110 & 182. 1949; Mold., Résumé 135 & 451. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 801. 1962; Mold., Fifth Summ. 1: 213 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 204 & 540. 1980; Mold., Phytologia 57: 34 (1985) and 59: 333. 1986.

Illustrations: Crowfoot, Pl. North. Cent. Sudan pl. 149, fig. 2. 1928.

A much-branched shrub, to 5.5 m. tall; branches terete, abundantly lenticellate; bark cinereous; branchlets tetragonal, woody, glabrous; leaves decussate-opposite; petioles to 1.3 cm. long; leaf-blades moderately firm or coriaceous, oblong or subrhomboid, to 4 cm. long and 3 cm. wide, apically acute or obtuse, marginally entire or coarsely crenate at the middle, basally cuneate, glabrous on both surfaces or subglabrous above and pilosulous on the larger venation beneath; inflorescence axillary, cymose, pedunculate, few-flowered, subequaling the subtending leaf; peduncles to 3 cm. long; pedicels much longer than the calyx; calyx campanulate, 3--5 mm. long and wide, glabrous or pilose, the rim 5-dentate, the teeth small, suborbicular, apically obtuse; corolla-tube very short, the limb lilac, about 2.1 cm. wide, the lowest (anterior) lobe enlarged; fruiting-pedicels nutant; fruit drupaceous, globose, about 6 mm. long and wide, many times longer than the calyx, deeply 4-lobed.

This species is based on *Hildebrandt 1522* from the Ahl and Sérrut mountains near Meid, at 1000--1800 m. altitude, in Somalia, collected in flower and fruit in April, 1875. Vatke (1882) asserts that the species is "Antecedenti [*C. myricoides*] proximum ex flore, nisi mavis sectionis *Euclerodendri* § 1, J. C. Schauer l.c. 658 adnumerare". Actually, it belongs to the Subgenus *Cyclonema*. Vatke goes on to say that "Species dicata cl. professori Neumayer, observatorii quod dicunt, marini hamburgensis directori, de Hildebrandtii itin-eribus optime merito."

Baker (1900) cites *Hildebrandt 1522* and unnumbered Edith Cole and Lort-Phillips collections from what was then British Somaliland [now part of Somalia], noting that "I strongly suspect this is only a shrubby montane variety of *C. myricoides*." Engler (1892) also cites *Hildebrandt 1522*, as does Cufodontis (1962) in listing it from Ethiopia. Thomas (1936) also cites only the type collection, but erroneously as "*Neumayer 1522*"

Wangerin (1936) cites the Crowfoot illustration (1928) as "pl. 49".

A key to help distinguish this species from other African *Cyclonema* species will be found under *C. myricoides* (Hochst.) R. Br. in the present series of notes [62: 371--375], which see.

Citations: SOMALIA: *Hildebrandt 1522* (L--isotype, N--isotype, V--isotype).

CLERODENDRUM NHATRANGENSE Dop in Lecomte, Fl. Gén. Indo-chine 4: 853 & 882--883 [as "*Clerodendron*"]. 1935; Mold., Known Geogr. Dis-



trib. Verbenac., ed. 1, 59 & 90. 1942.

Synonymy: *Clerodendron nhatrangense* Dop in Lecomte, Fl. Gén. Indo-chine 4: 853 & 882. 1935.

Bibliography: Dop in Lecomte, Fl. Gén. Indo-chine 4: 853 & 882--883. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 68. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 90 (1942) and ed. 2, 136 & 182. 1949; Mold., Résumé 175 & 451. 1959; Mold., Fifth Summ. 1: 300 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 291 & 540. 1980.

A tree, about 6 m. tall; branches terete, canaliculate, striate, glabrous, nigrescent in drying; leaves decussate-opposite; petioles 5--8 mm. long, glabrous; leafblades elliptic-oblong, 5--8 cm. long, 1.5--2 cm. wide, apically acutely acuminate, marginally entire, revolute in drying, basally long-attenuate; venation prominent, the secondaries 10--12, beautifully recurved and anastomosing in loops near the margins, the tertiaries irregular, the veinlet reticulation indistinct; inflorescence terminal, paniculate, the panicles 1--5 cm. long and wide, glabrous, fastigiate branched; bracts and bractlets small, linear; pedicels 2--5 mm. long; flowers fragrant; calyx campanulate, 8 mm. long, coriaceous, glabrous, the lobes triangular, 4--5 mm. long, apically acute; corolla white, 3.5 cm. long, very finely puberulent, the tube slender, cylindric, 3 cm. long, the limb 4-lobed, the lobes elliptic-oblong, 5 mm. long; stamens inserted near the summit of the corolla-tube, exerted; anthers oblong; style equaling the stamens; stigma shortly bifid; ovary glabrous; fruit not known.

This poorly known endemic species is based on an unnumbered Poinlane collection from Nhatrang, Annam, Vietnam. Dop (1935) states that the species was too insufficiently known to him to be incorporated into his key to the Indonesian species of the genus. Nothing is known to me of it beyond what is stated in its meager bibliography (above).

*CLERODENDRUM NIPENSE* Urb., Feddes Repert. Spec. Nov. 20: 348 [as "*Clerodendron*"]. 1924; Mold., Geogr. Distrib. Avicenn. 5. 1939.

Synonymy: *Clerodendron nipense* Urb., Feddes Repert. Spec. Nov. 20: 348. 1924. *Clerodendron nipense* var. *nipense* [Urb.] ex Alain in León & Alain, Fl. Cuba. imp. 1, 4: 321. 1957. *Clerodendron nipensis* Urb., in herb. *Clerodendrum lindenianum* var. *longiflorum* Mold., in herb.

Bibliography: Urb., Feddes Repert. Spec. Nov. 20: 348. 1924; A. W. Hill, Ind. Kew. Suppl. 7: 51. 1929; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1072. 1932; Mold., Geogr. Distrib. Avicenn. 5. 1939; Mold., Prelim. Alph. List Inv. Names 21. 1940; Mold., Alph. List Inv. Names 19. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 25 & 90. 1942; Mold., Alph. List Cit. 1: 75, 136, & 184--186. 1946; Mold., Alph. List Inv. Names Suppl. 1: 7. 1947; Mold., Alph. List Cit. 2: 487 & 649--652 (1948), 3: 740, 868, 928, & 929 (1949), and 4: 1034, 1080, 1094, 1157, 1158, & 1198. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 43, 182, & 183. 1949; Alain, Rev. Soc. Cub. Bot. 13: 33. 1956; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 319 & 321. 1957; Conde, Hist. Bot. Cuba 218. 1958; Mold., Ré-

sumé 51, 267, 273, & 451. 1959; Mold., Fifth Summ. 1: 95, 452, & 464 (1971) and 2: 870. 1971; Alemán Frías, Aurich, Ezcurra Ferrer, Gutiérrez Vázquez, Horstmann, López Rendueles, Rodríguez Graquitená, Roquel Casabella, & Schreiber, Die Kulturpfl. 19: 422. 1972; Farnsworth, Pharmacog. Titles 8 (8): vi. 1973; Alain in León & Alain, Fl. Cuba, imp. 2, 2: 319 & 321. 1974; Mold., Phytol. Mem. 2: 88 & 540. 1980; Mold., Phytologia 57: 478 (1985) and 60: 130. 1986.

A mostly low shrub, 0.2--2 m. tall; branches terete, conspicuously verruculose or tuberculate with small, subrotund, prominent lenticels, the younger parts, branchlets, and twigs minutely puberulent with very short, erect, patulous hairs, brown; leaf-scars large, corky, prominent, elliptic; nodes not annulate; principal internodes 0.3--9.5 cm. long, mostly abbreviated (except on young shoots); leaves decussate-opposite; petioles stout, 3--6 mm. long, 0.8--1.3 mm. thick, subterete, sulcate above, puberulent like the twigs; leafblades coriaceous, gray-green above, dull green beneath, lanceolate or oblong-lanceolate to oblong, 2.7--12 cm. long, 1.3--2.5 cm. wide, apically narrowed and acute or rounded, marginally entire or subentire to irregularly denticulate-dentate with spinose teeth, basally rounded and mostly slightly emarginate-cordate, glabrate and slightly shiny above, pulverulent-pilose beneath; midrib slender, prominent in a channel above, very prominent beneath; secondaries 7--9 per side, issuing at an angle of 60--70°, arcuate-ascending, short, subimpressed above or prominent in a shallow channel, very prominent beneath and anastomosing-confluent near the margins; veinlet reticulation obsolete or indistinct on both surfaces; inflorescence axillary, the cymes to 10 cm. long and wide, 2--6-flowered, very lax, minutely tuberculate and very shortly pilose throughout; peduncles slender, 0.5--4 cm. long, tuberculate, pilose; pedicels slender, 1--4 cm. long; bracts none; bractlets and prophylla filiform, 1.5--2 mm. long; flowers sweetly fragrant; calyx 3 mm. long, glabrous or puberulous, apically ampliate; corolla white, 2.5--3 cm. long, the lobes elliptic-oblong, about 6.5 mm. long; fruit drupaceous, fleshy, about 8 mm. long, blue or light-blue.

This endemic Cuban species is based on *Ekman 9500* from pinewoods along the Rio Piloto in the Sierra de Nipe, Oriente, Cuba, deposited in the Berlin herbarium, now destroyed. The species is obviously closely related to *C. lindenianum* A. Rich., but differs in its corolla-tubes being 2.5--3 cm. long when fully grown; from *C. lindenianum* var. *camagueyense* (Britton & P. Wils.) Mold. it differs in its leafblades being more or less oblong, mostly 2.7--6.9 cm. long and 0.7--2.1 cm. wide.. A key to help distinguish *C. nipense* from other Cuban taxa in this genus will be found under *C. grandiflorum* (Hook.) Schau. in the present series of notes [60: 130--131].

Collectors have encountered the plant in pinewoods on savannas, in pineland thickets, often on siliceous rocks, in dry ferruginous soil among pines, and on limestone near the seashore, at altitudes from near sealevel to 750 m., in flower from February to April, and in fruit in April and May. A vernacular name reported for the plant is "turquesa".

Urban (1924) cites also *Ekman 3134, 3206, & 4727* from Cuba. The

corollas are described as "white" by all collectors who make any note at all of corolla-color (viz., Ekman 6736 & 9500 and Shafer 4175).

Material of *C. nipense* has been misidentified and distributed in some herbaria as *C. lindenianum* A. Rich.

Citations: CUBA: Oriente: *Acuna* 12697 (Es, W--1881253), 12698 (Es, W--1881254), 12699 (Es, W--1881255), 12700 (Es, W--1881256), 12701 (Es, W--1881257), 12702 (Es), 12703 (Es), 13330 (Es, N), s.n. [Herb. Roig 8697] (Rg), s.n. [Herb. Roig 8727] (Rg); *Mrs. G. C. Bucher* 97 [Herb. Roig 8156] (N, Rg), 11437 (Es); *Carabia* 3733 (Ha, N); *Curbelo* s.n. [Roig 6220] (N); *Ekman* 3134 (B, S), 3206 (B, N, S), 4727 (B, E--photo, Ld--photo, N--photo, S), 6736 (W--2113462), 9500 (B--type, E--photo of isotype, Ld--photo of type, Ld--photo of isotype, N--photo of type, N--photo of isotype, S--isotype); *León* 20237 (Ha, N); *León & Alain* 19153 (N), 19272 (Ha, N, N); *León & Victorin* 19841 (Ha), 19933 (Ha), 20942b (Ha, N); *León, Victorin, & Alain* 19841 (N), 19913 (Ha, N), 19933 (N); *M. López F.* 2591 (W--2226673); *Marie-Victorin & Clément* 22075 (Ha, Vi); *E. R. Mitchell* 16 (G, Ld--photo, N--photo); *Shafer* 1684 (N, W--696188), 4175 (G, N, W--696321).

*CLERODENDRUM NIPENSE* var. *PUBESCENS* Mold., Geogr. Distrib. Avicenn. 5 nom. nud. 1939; Carib. Forest. 2: 14. 1940.

Bibliography: Mold., Geogr. Distrib. Avicenn. 5. 1939; Mold., Carib. Forest. 2: 14. 1940; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 25 & 90. 1942; Mold., Alph. List Cit. 1: 75 (1946) and 2: 649. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 43 & 183. 1949; Alain in León & Alain, Fl. Cuba, imp. 1, 4: 321. 1957; Mold., Résumé 51 & 451. 1959; Mold., Fifth Summ. 1: 95 (1971) and 2: 870. 1971; Alain in León & Alain, Fl. Cuba, imp..2, 2: 321. 1974; Mold., Phytol. Mem. 2: 88 & 540. 1980.

This variety differs from the typical form of the species in having much smaller leaves, only 2.6--3.6 cm. long in all and 9--12 mm. wide, and in being densely short-pubescent on the twigs, petioles, lower leaf-surfaces, peduncles, inflorescence-branches, and pedicels with quite uniform pubescence.

The variety is based on *G. C. Bucher* 10 from Caguaneque, Sagua de Tanamo, Oriente, Cuba, deposited in the herbarium of the Colegio de la Salle in Havana.

Thus far this endemic taxon is known to me only from the original collection.

Citations: CUBA: Oriente: *G. C. Bucher* 10 [León 18550] (Ha--type, N--fragment of type).

*CLERODENDRUM NOVAE-POMMERANIAE* Warb. ex K. Schum., Notizbl. Bot.

Gart. Berlin 2: 145 [as *Clerodendron novae pommeraniae*]. 1898; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 68 & 91. 1942.

Synonymy: *Clerodendron novae pommeraniae* Warb. ex K. Schum., Notizbl. Bot. Gart. Berlin 2: 145. 1898.

Bibliography: K. Schum., Notizbl. Bot. Gart. Berlin 2: 145. 1898; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 68 & 91 (1942) and ed. 2, 150 & 183. 1949; Mold., Résumé 204 & 451. 1959; Mold., Résumé

mé Suppl. 15: 18. 1967; Mold., Fifth Summ. 1: 339 & 452 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 329 & 540. 1980.

The original Schumann reference to this taxon (1898) states merely that it is based on *Warburg Pl. Pap. 429* from "Ralum, in Schluchten (Warburg); auf vulkanischem Boden in Waldthal bei Lowon (Dahl, blühend im Februar 1897). Anmerkung. Ein grosser Waldbaum nit gefingerten Blättern; die Lippenblüten sind grünlich-gelb, die Unterlippe ist violett geadert. Auf der Insel endemisch."

It seems obvious that this taxon is conspecific with *Vitex novae-pommeraniae* Warb., which see in my series of notes on the genus *Vitex* in *Phytologia* 51: 267--269 (1982).

*CLERODENDRUM NUDIFLORUM* Mold., *Phytologia* 3: 407--408. 1951.

Bibliography: Mold., *Phytologia* 3: 407--408. 1851; Mold. in Humbert, *Fl. Madag.* 174: 147, 156--160, & 268, fig. 24 (1--3). 1956; G. Taylor, *Ind. Kew. Suppl.* 12: 26. 1959; Mold., *Résumé* 156 \$ 451. 1959; Mold., *Fifth Summ.* 1: 260 (1971) and 2: 870. 1971; Mold., *Phytol. Mem.* 2: 249 & 540. 1980; Mold., *Phytologia* 58: 184 & 185. 1985.

Illustrations: Mold. in Humbert, *Fl. Madag.* 174: 159, fig. 24 (1-3). 1956.

A shrub or small tree, 2--8 m. tall, or liana, branching from the base, with a fetid terebinthine odor; bark gray, smooth; wood white; branchlets rather slender or medium-thick, obtusely tetragonal or sometimes sharply so and with marginal angles and longitudinally wrinkled cortex in drying, glabrous and shiny, very light gray, sometimes minutely puberulous-pilosulous toward the apex, leafless at time of anthesis; twigs similar to the branchlets or the young leaf-producing ones nigrescent in drying, very minutely scattered-pilosulous or glabrous, very slender; nodes not annulate; principal internodes abbreviated, 0.4--6 cm. long; terminal buds and leaf-scars usually rather densely yellowish-puberulent; leaves decussate-opposite, mostly appearing after the flowers (often a month later), rarely a few greatly undeveloped ones at the base of the inflorescence; petioles distinct, slender, 1--2 cm. long, glabrous, nigrescent in drying; leafblades thin-membranous, nigrescent in drying, elliptic, often more or less conduplicate, apparently to about 8 cm. long and 3--4 cm. wide, apically acute or acuminate, marginally entire when young, later shallowly serrate with broad blunt teeth, basally acute, glabrous on both surfaces; midrib very slender, flat above, very slightly prominulous beneath; secondaries filiform, about 6 per side, arcuate-ascending, mostly very obscure and flat on both surfaces; veinlet reticulation mostly obscure or indiscernible on both surfaces; inflorescence terminal and terminating abbreviated lateral twigs, paniculate, appearing before the leaves (often a month earlier) or with a very few immature leaves at the base, 10--12 cm. long, basally 4--6 cm. wide, very loosely many-flowered, composed of about 6--8 pairs of few-flowered cymes; rachis very slender, glabrous, mostly sharply tetragonal; peduncles very slender, rose-color, exactly similar to the sympodia, about 1 cm. long or obsolete; bractlets linear, 1--3 mm. long, glabrous, a pair subtending each pair of cymes and each cyme-furcation; cymes once or twice fur-

cate, 3--7-flowered, the ramifications elongate and widely divaricate, glabrous; calyx campanulate or cupuliform, 2--3 mm. long and wide, glabrous, reddish-green, nigrescent in drying, the rim very shortly 5-toothed, the teeth broadly ovate, apically acute or blunt, often marginally minutely ciliolate, the posterior and 2 anterior ones slightly smaller and narrower than the lateral ones; corolla white or rosy-white to greenish-yellow or red-violet, 2-lipped, the lower lip often violet and the upper lip bright-green, externally puberulent or glabrous above the calyx, internally glabrous or puberulent, the tube cylindric, about 5 mm. long, arched, the anterior lip bilobed, 7--8 mm. long, the lateral lobes oval, more or less concave, 6--7 mm. long, the posterior lobes slightly narrower and longer than the lateral ones, apically obtuse, slightly concave and spreading; stamens 4, long-exserted, inserted near the apex of the corolla-tube in the midst of a tuft of hair; filaments white, glabrous (or hairy at the base), 10--12 mm. long; anthers bilocular, oblong, yellow-orange, dehiscent by means of introrse slits; style terminal, arched, 10--12 mm. long, glabrous; stigma punctiform, subbilobed or bifid, rosy-tipped; ovary ovoid, apically slightly 4-lobed, 2- or 4-celled, glabrous, sitting on a small, green, glabrous disk; ovules suspended, anatropous, 2 or 4 per cell; fruiting-calyx patelliform, nigrescent in drying, about 4 mm. wide, subglabrescent, the rim shallowly lobed; fruit drupaceous, subglobose, 6--8 mm. long and wide, glabrous, deeply 2- or 4-lobed in drying.

This endemic species is based on *Perrier 10221* from the hills about Tambirano, Madagascar, collected on June 8, 1908, and deposited in the Paris herbarium.

Collectors have encountered this plant in remnant thickets and forests, on gneiss, basalt, or limestone rocks, and in sandy areas on dunes, at altitudes of 2--1200 m., in flower in September and October, and in fruit in November. A vernacular name recorded for the species is "vohomiha".

The corollas are said to have been "red-violet" on *Bernardi 11152*, "violacée" on *Decary 1042*, "jaune verdâtre" on *Perrier 2516*, and "blanc un peu rose" on *Decary 3292*.

A key to help distinguish this species from other Madagascar taxa in this genus will be found under *C. baronianum* Oliv. in the present series of notes [58: 184--190].

Material of *Clerodendrum nudiflorum* has been misidentified and distributed in some herbaria as *Rubiaceae*.

Citations: MADAGASCAR: *Bernardi 11152* (Ac), 11197 (Ac); *Cours 568* (P); *Decary 1042* (P), 3065 (P), 3292 (P), 10697 (P); *Humbert & Perrier 2516* (P, P); *Humbert & Swingle s.n.* [Aug. 11--15, 1928] (P); *Leandri 323* (P); *Methuen s.n.* [11.4.1911] (K); *Perrier 1102* (N, P, P), 10204 (N, P), 10221 (Ld--photo of type, N--photo of type, P--type), 18779 (P); *Ursch 215* (P).

*CLERODENDRUM NUDIFLORUM* var. *PUBERULENTUM* Mold., *Phytologia* 3: 409. 1951.

Bibliography: Mold., *Phytologia* 3: 409. 1951; Mold. in *Humbert, Fl. Madag.* 174: 147, 158--160, & 268, fig. 24 (4). 1956; Mold., *Ré-*



sumé 156 & 451. 1959; Mold., Fifth Summ. 1: 260 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 249 & 540. 1980; Mold., Phytologia 58: 185. 1985.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 159, fig. 24 (4). 1956.

This variety differs from the typical form of the species in having the peduncles, rachis, inflorescence ramifications, pedicels, bractlets, and calyx very densely puberulent.

This endemic variety is based on A. Seyrig 91 from rocky places near Ampudandara, at 700--1000 m. altitude, between Bekily and Tai-vory, Madagascar, collected in September [flowers] and October [leaves], 1942, and deposited in the Paris herbarium.

A key to help distinguish this taxon from other Madagascar taxa will be found under *C. baronianum* Oliv. in the present series of notes [58: 184--190].

Thus far the variety is known to me only from the original collection.

Citations: MADAGASCAR: Seyrig 91 (Ld--photo of type, N--photo of type, P--type).

*CLERODENDRUM NUTANS* Jack, Malay. Misc., imp. 1, 1 (1): 17 [as "*nutans* Wall."]. 1820; E. D. Merr., Journ. Arnold Arb. 33: 219--220 [as "*Clerodendron*"]. 1952 [not *C. nutans* Wall., 1829].

Synonymy: *Clerodendron nutans* Jack apud Wall., Numer. List [49], no. 1794 in syn. 1829. *Clerodendron penduliflorum* Wall., Numer. List [49], no. 1795 hyponym. 1829; Walp., Repert. Bot. Syst. 4: 104. 1845. *Clerodendron penduliflorum* Wall. apud Hook., Bot. Misc. 1: 284. 1830. *Clerodendron penduliflorum* "Wall. ex Schau." apud Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 110 in syn. 1921. *Clerodendron pendulifolium* Wall. ex Mold., Fifth Summ. 1: 452 in syn. 1971. *Clerodendron nutans* var. *penduliflorum* (Wall.) Bakh. ex Mold., Fifth Summ. 1: 452 in syn. 1971. *Clerodendron disparifolium* Ridl. ex B. C. Stone, Henderson's Malay. Wild Fls. App. 16 in syn. 1977 [not *Clerodendron disparifolium* Bakh., 1938, nor Hassk., 1921, nor *Clerodendron disparifolium* Blume, 1826].

Bibliography: Jack, Malay. Misc. [Decrip. Malay. Pl.], imp. 1, 1: 17. 1820; Wall., Numer. List [49], nos. 1794 & 1795. 1829; W. Hook., Bot. Misc. 1: 283--284. 1829; W. Hook., Curtis Bot. Mag. 58 [ser. 2, 5]: pl. 3049 in nota. 1831; Jack., Journ. Bot. Brit. 1: 39. 1834; Steud., Nom. Bot. Phan., ed. 2, 1: 383. 1840; Jack ex Griff., Calcut. Journ. Nat. Hist. 4: 39--40. 1843; Walp., Repert. Bot. Syst. 4: 104. 1845; Schau. in A. DC., Prodr. 11: 664. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106. 1858; Miq., Fl. Ned. Ind. 2: 873. 1858; Jack, Malay. Misc. [Descrip. Malay. Pl.], imp. 2, 1: 17. 1877; C. B. Clarke in Hook. f., Fl. Brit. India 4: 591. 1885; Jack in Trübner, Orient. Ser., ser. 2, 1: 217. 1887; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 175. 1895; Brandis, Indian Trees, imp. 1 & 2, 508 (1906) and imp. 2a, 508. 1907; Gamble in King & Gamble, Journ. Asiat. Soc. Beng. 74 (2 extra): 826 & 830--831. 1908; Brandis, Indian Trees, imp. 3, 508. 1911; Ridl., Journ. Roy. Asiat.



Soc. Straits 59: 156. 1911; H. Hallier, Meded. Rijks Herb. Leid. 37: 72. 1918; H. J. Lam, Verbenac. Malay. Arch. 265 & 364. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 80, 81, 110, & ix. 1921; Brandis, Indian Trees, imp. 4, 508. 1921; Rodger in Lace, List Trees Shrubs Burma, ed. 2, 133. 1922; Ridl., Fl. Malay Penins. 2: 624 & 626. 1923; E. D. Merr., Univ. Calif. Publ. Bot. 15: 265. 1929; Burkill, Dict. Econ. Prod. Malay Penins., imp. 1, 1: 589. 1935; Dop in Lecomte, Fl. Gén. Indo-chine 4: 852 & 871--872. 1935; Fletcher, Kew Bull. Misc. Inf. 1938: 404, 424, & 427. 1938; Mold., Prelim. Alph. List Inv. Names 21. 1940; Mold., Alph. List Inv. Names 19. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; E. D. Merr., Journ. Arnold Arb. 33: 219--220. 1956; Mold., Résumé 165, 174, 268, & 452. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Hundley & Ko in Lace, Trees Shrubs Burma, ed. 3, 203. 1961; Mold., Résumé Suppl. 3: 26 & 28. 1962; Burkill, Dict. Econ. Prod. Malay Penins., imp. 2, 1: 589. 1966; Mold., Résumé Suppl. 14: 11 (1966) and 17: 7. 1968; Brandis, Indian Trees, imp. 5, 508. 1971; Mold., Fifth Summ. 1: 282, 285, 295, 304, 322, 359, 452, & 464 (1971) and 2: 870. 1971; M. R. Henderson, Malay. Wild Fls. Dicot., imp. 2, 1: 385. 1974; B. C. Stone, Henderson's Malay. Wild Fls. Append. 16. 1977; Mold., Phytol. Mem. 2: 272, 275, 284, 295, 313, 350, & 540. 1980; Mold., Phytologia 50: 252. 1982; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 440. 1983; Mold., Phytologia 57: 338 & 344 (1985), 59: 330 & 344 (1986), 60: 136 & 142 (1986), and 61: 88, 89, 338, & 406. 1986.

An erect shrub, 2--3 m. tall, or small tree; stems 3--4 cm. in diameter; leaves decussate-opposite, long-petiolate; petioles 2.5--5 cm. long; leafblades lanceolate or elliptic-lanceolate to elongate-elliptic or oblong, 12.7--22.5 cm. long, 2.5--10 cm. wide, apically acuminate or long-acuminate, marginally entire or subentire to crenulate-subrepand, sometimes distinctly toothed, basally attenuate to cuneate or obtuse, glabrous on both surfaces (when mature), glaucescent beneath; inflorescence terminal, paniculate, the panicle slender, elongate, pendulous, lax, non-foliose, 20--30 cm. long, minutely pubescent or puberulent to subglabrous throughout, the individual cymes few- (mostly 1--3-) flowered; peduncles and pedicels filiform; calyx smaller than in *C. wallichii* Merr., brownish-pink or red, 6--8 mm. long, lax, divided nearly to the base, the segments 5, linear or oblong to elongate-triangular, equaling the tube in length, hardly ampliate basally, apically cuneately acute, minutely pubescent; corolla hypocrateriform, white, the lobes oblanceolate; fruiting-calyx slightly accrescent, reddish, reflexed; fruit drupeaceous, globose, 6--8 mm. long and wide, at first green, succulent.

Jack's original (1820) description of this plant is: "*C. Nutans*, Wall. Foliis lanceolatis acuminatis glabris, paniculis longissimis terminalibus nutantibus, pedunculis remotis divaricatis paucifloris. These panicles or racemes hang gracefully from the extremity of the branches; the flowers are white, not numerous, the peduncles or primary divisions of the panicle being remote, opposite, divaricate, short, and seldom bearing more than three flowers. It is called

Unting unting by the Malays."

Merrill (1952) discusses the nomenclatural history of this plant in detail as follows: "*Clerodendron nutans* Jack, Mal. Misc. 1 (1): 17. 1820; reimp. Hook., Bot. Misc. 1: 284. 1830; III. 39; IV. 39; V. 217, omn. sub *C. molle* Jack. Penang (*C. penduliflorum* Wall. List no. 1795. 1829, nom. nud. et ex Schauer in DC. Prodr. 11: 664. 1847, descr.), non *C. nutans* Wall., List no. 1793. 1829, nom. nud. et ex D. Don, Prodr. Fl. Nepal. 103. 1825, descr. Jack's description, although short, is excellent. It was based on Penang material, as he thought that which he had before him represented the as yet undescribed *C. nutans* Wallich. When one scans Jack's graphic description, 'paniculis longissime terminalibus nutantibus, pedunculis [ramis] remote paucifloris', and again 'these panicles or racemes hang gracefully from the extremity of the branches', it is understandable why Jack thought that he had before him a representative of Wallich's species. Wallich erred, List no. 1794, 1829, when he renamed what he supposed to be the form Jack had described as *C. jacksonum* Wall.; this, as later described by Schauer, based on the actual Wallich specimen, explains why the very different *C. disparifolium* Blume, *C. laevigatum* Blume, and *C. acuminatum* Wall. became involved here. Mr. H. K. Airy Shaw reports that Wallich 1794 from Penang (this was collected by Wallich in 1822, not by Jack), in his opinion, represents the very different *C. disparifolium* Blume. For the binomial as here accepted and applied, that is *C. nutans* Jack (non Wall.), *C. penduliflorum* Wall. is a synonym, as Wallich's species is defined and amply described by Gamble in King & Gamble, Jour. As. Soc. Bengal 74 (2): 830. 1909 (Mater. Fl. Mal. Pen. 4: 1040), and accepted by Riley.

"Its range is apparently Burma, the Nicobar Islands, Penang, and various parts of the Malay Peninsula. I am confident that a Korthals collection from Mt. Singalang, Sumatra (a rather poor specimen of which is before me), which Hallier f., Meded. Rijksherb. 37: 72. 1918, listed as *C. nutans* Wall., really represents *C. nutans* Jack. The Indian form was not introduced into cultivation in Malaya before 1820; and Ridley is clear, as to this Malay Peninsula form with pendulous inflorescences, that it occurs here and there in forests - i.e., that it is a native of the region.

"Schauer, in 1847, recognized *C. nutans* Wall. (Bengal, Sylhet), *C. jacksonum* Wall. (Penang), and *C. penduliflorum* Wall. (Tavoy) as distinct species. All taxonomists have overlooked the fact that as far as the binomial *C. nutans* is concerned, Jack was the first author who associated a description with it, and that the binomial to be maintained must hence be *Clerodendron nutans* Jack (1820). It seems to be clear that the common Indian form, currently known as *Clerodendron nutans* Wall., of which at least fifteen individual collections are available to me from northern India to Burma, as well as specimens taken from cultivated plants in Cuba and Australia, has no valid name. This is unfortunate, because now that species is widely distributed in cultivation. For this a new binomial is proposed, *Clerodendron wallichii* nom. nov. (*C. nutans* Wall. List no. 1793, 1829, nom. nud., et ex D. Don, Prodr. Fl. Nepal. 103. 1825,

descr., et auctt. plur., non Jack, 1820). This species was beautifully illustrated by Hooker, Bot. Mag. 58: pl. 3049. 1831. The species occurs in the Malay Archipelago only as an introduced and cultivated plant, unless one be willing to interpret *C. nutans* Wall. as being identical with *C. nutans* Jack, together with *C. penduliflorum* Wall., a proceeding that I am not willing to approve. *Clerodendron jackianum* Wall., as described by Schauer, and *C. acuminatum* Wall. are totally different from *C. wallichii* Merr."

It may be pointed out here, too, that the *Clerodendrum disparifolium* Blume, mentioned in the synonymy (above), is a distinct species, which see [59: 325--332 & 60: 462--463] in the present series of notes; the *Clerodendron disparifolium* accredited to Bakhuizen is a synonym of *C. garrettianum* Craib, while that credited to Hasskarl is a synonym of *C. laevifolium* Blume -- all three of these taxa differ in having their cymes axillary or in terminal leafy panicles the lower branches of which being axillary. In *C. nutans* and *C. wallichii* the cymes are in definite non-foliose terminal nutant panicles.

Wallich's *C. penduliflorum* is based on a specimen collected in Tavoy by W. Gomez; the original description, as given by Walpers (1845) is: "Foliis longe petiolatis elliptico-lanceolatis utrinque attenuatis, apice longe acuminatis crenulato-subrepandis integerimis, utrinque glaberrimis, subtus glaucescentibus; panicula terminali laxa pendula; pedunculis oppositis 1--3-floris. ♀ -- Petioli 2-pollicares, folia maxima 7½ poll. longa, 2 ¾ poll. lata. Inflorescentia omnino praecedentis [*C. nutans* Wall.]. Calyx minor laxus acute quinque-dentatus, lacinae limbi tubum aequantes obovatae obtusae. -- Forte praecedentis habenda est varietas. -- Crescit in India orientali."

The basally narrowed calyx-segments in *C. nutans* Jack distinguish it quickly from *C. wallichii* Merr., although the two taxa are obviously very closely related; in *C. wallichii* the calyx-segments are basally broadly ovate.

Collectors have encountered *Clerodendrum nutans* Merr. on low hills, along streams in bamboo forests, in scrub, in light or dark shaded evergreen forests, and among limestone rocks, from under 50 to 300 m. altitudes, in anthesis in January, September, October, and November and in fruit in December.

Clarke (1885) adopts the name *C. penduliflorum* Wall. for this species and cites *Kurz s.n.* from Akyab (in Upper Burma) and *Helfer 6047* from Tenasserim (Lower Burma), listing it also from the Nicobar Islands. Briquet (1895) also refers to it as *C. penduliflorum*, distinct from *C. nutans* Wall., and gives its distribution as "den Malakkischen Halbinsel und den Nikobarinseln". Ridley (1911), as *C. penduliflorum* records it from Kedah. Gunong Geriang, Tongka, and Trang at Chong in Malaya, citing *Ridley 14940* and unnumbered Micholitz and Napier collections, giving its overall distribution as "Burmah, Nicobars, Penang, and Limestone rocks, Perak and Selangor." It is listed as *C. penduliflorum* by Brandis (1906) from Lower Burma and the Malay Peninsula, and so also by Rodgers (1922) and by Kundley & Ko (1961) from Burma; as *C. nutans* it is listed by Henderson

(1974) from Malaya. Steudel (1840) reduced *C. nutans* Jack to synonymy under *C. jackianum* Wall., keeping *C. penduliflorum* as distinct. Bakhuizen (1921) places *C. nutans* Jack, along with *C. jackianum* Wall., *C. acuminatum* Wall., and *C. disparifolium* Hassk. in the synonymy of *C. laevifolium* Blume.

Fletcher, adopting the name *C. penduliflorum* Wall. but erroneously crediting it to Schauer (1847) [as is done also by some other authors] rather than to Walpers (1845), cites from Thailand: Annandale s.n. Collins 1283 & 1283a, Dolman 6784, Fox 3830, Haniff & Nur 7530, Kerr 9448, 10282, 11614, 14378, & 16284, and Put 3284. Bakhuizen asserts that it is cultivated in the Malay Archipelago and Merrill claims that it exists only in cultivation there.

Vernacular names reported for the species are "kauk-yin" and "unting unting".

Keys to help distinguish this species from other Thailand and Malayan taxa in this genus may be found under *C. inerme*(L.) Gaertn. in the present series of notes [61: 88--90].

Material of *C. nutans* Jack has mostly been misidentified and distributed in herbaria as *C. nutans* Wall. or *C. wallichii* Merr.

Citations: BURMA: Tenasserim: Meebold 17000 (S); Rock 733 (W--1171441), 760 (W--1171453). THAILAND: Collins 1283a (W--1701089), 1283b (W--1701090); Maxwell 74-1069 (Ac); Tagawa, Shimizu, Hutch, Koyama, & Nalapoon T.9921 (Ac). MALAYA: Kedah: Haniff & Nur 7530 (Bz--20114); Nur 7530 (Ld--photo, N, N--photo). Pahang: M. R. Henderson 19445 (Bz--20160, Ca--342817). CULTIVATED: New Zealand: Sykes 318/62 (Nz--126353).

*CLERODENDRUM NUXIOIDES* (S. Moore) Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 69. 1936.

Synonymy: *Siphonanthus* (§*Clerodendron*) *nuxioides* S. Moore in Baker, Moore, & Rendle, Journ. Linn. Soc. Lond. 37: 197. 1905. *Clerodendrum nuxioides* S. Moore apud W. Robyns, Fl. Sperm. Parc Albert 2: 144. 1947. *Clerodendron nuxioides* S. Moore, in herb.

Bibliography: S. Moore in Baker, Moore, & Rendle, Journ. Linn. Soc. Lond. 37: 197--198 (1905) and 37: 562. 1906; Prain, Ind. Kew. Suppl. 4, imp. 1, 166. 1913; S. Moore, Journ. Bot. Brit. 54: 290. 1916; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 40, 69, & 94. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 48, 49, & 91. 1942; W. Robyns, Fl. Sperm. Parc. Nat. Albert 2: 142--144. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 115, 118, & 183. 1949; Prain, Ind. Kew. Suppl. 4, imp. 2, 166. 1958; Mold., Résumé 141, 143, & 452. 1959; Mold., Fifth Summ. 1: 229 & 233 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 219, 223, 437, & 540. 1980; Mold., Phytologia 58: 441. 1985.

A shrub, ramose, abundantly foliose; leaves decussate-opposite; petioles 0.7--2.5 cm. long; leafblades membranous to coriaceous, obovate or obovate-oblong, 8--12 cm. long, 4--6 cm. wide, not nigrescent in drying, apically obtuse and cuspidate, basally cuneate, the lowest 6 mm. gradually attenuate into the petiole, marginally entire, glabrous; secondaries about 6 per side; veinlets delicate,

short, conspicuous on both surface, the reticulation elegant; inflorescence terminal, paniculate, pedunculate, leafless, the cymes lax, few-flowered, 5--9 cm. long (mostly not over 8 cm. long), often equaling the leaves, very minutely pubescent, the ramifications about 10mm. long, the cymules few-flowered, pseudo-umbelliform; pedicels shorter than the calyx, about 2 mm. long; bracts narrowly linear, 1.7 mm. long; calyx tubular-campanulate or narrowly cylindrical, 5 mm. long (when moistened), the tube 3.5 mm. long. 2/5 mm. wide, more or less longitudinally striate, puberulent, shortly 5-lobed, the lobes triangular or deltoid, 1.3 mm. long, apically acute; corolla white, the tube about 1 cm. long, very slender, straight, twice as long as the calyx, basally 1.2 mm. wide, upwardly scarcely 1 mm. wide, at the throat barely 2 mm. wide, the lobes short, obovate, scarcely 3 mm. long, apically very obtuse; anthers exerted to 6 mm.

The species is based on *Bagshawe* 579 from the shore of Lake Victoria Nyanza at Mutunda, Uganda, collected in flower in March, and deposited in the herbarium at Kew (according to Thomas) or the British Museum (according to the photographs cited below). Moore (1905) states that the leaves are rather shiny and that the species is "Nearest *Clerodendron Preussii*, Gürke, and *Cl. yaundense*, Gürke, from both of which it differs in the leaves narrowed below into the petiole, and in several floral details". In his 1916 work he claims that it resembles *C. validipes* S. Moore, but that the latter differs in its corolla-tube being scarcely longer than the calyx, the petiole bases persistent as spines, and the leaves often subopposite or alternate.

Collectors have encountered *Clerodendrum nuxioides* on stream-sides and lakesides, on lava plains, and in sclerophyllous associations, at 1000--1500 m. altitude, in flower in February and March.

Thomas (1936) cites *Bagshawe* [as "*Begshawe*"] 579 from Uganda and *Witte* 1397 from Zaire. Robyns (1947) cites only *Witte* 1397 and describes the plant as an "Arbuste rare de l'Afrique tropicale centrale, uniquement connu des rives du lac Victoria, dans l'Uganda".

A key to help distinguish *C. nuxioides* from the other African species in Section *Siphonocalyx* will be found under *C. mildbraedtii* Thomas in the present series of notes [62: 196--198].

Citations: ZAIRE: *DeWitte* 1397 (Br, Ld--photo, N, N--photo).  
UGANDA: *Bagshawe* 579 [Mo. Bot. Gard. photo A.839] (Go--photo of type, Ld--photo of type, N--photo of type, W--photo of type).

*CLERODENDRUM NYCTAGINIFOLIUM* Good in Good & Exell, Journ. Bot. Brit. 68, Suppl. 2: 142 [as "*Clerodendron*"]. 1930; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 36, 62, & 94 [as "*nyctaginaefolium*"]. 1936.

Synonymy: *Clerodendron nyctaginifolium* Good in Good & Exell, Journ. Bot. Brit. 68, Suppl. 2: 142. 1930. *Clerodendrum nyctaginaefolium* Good apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 36, 62, & 94. 1936.

Bibliography: Good in Good & Exell, Journ. Bot. Brit. 68, Suppl. 2: 142. 1930; A. W. Hill, Ind. Kew. Suppl. 8: 54. 1933; B. Thomas,



Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 36, 62, & 94. 1936; Fedde & Schust., Justs Bot. Jahresber. 58 (2): 329. 1938; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 50 & 91 (1942) and ed. 2, 118 & 183. 1949; Mold., Résumé 147 & 452. 1959; Mold., Fifth Summ. 1: 243 (1971) and 2: 870. 1971; Mold., Phytol. Mem. 2: 232, 387, 393, & 540. 1980.

A perennial undershrub; roots woody; branches erect, tetragonal, to 50 cm. long, puberulent; leaves small, decussate-opposite, petiolate; petioles to 1 cm. long; leafblades subdeltoid-lanceolate, to 5 cm. long and 3 cm. wide, apically acute, basally cuneate, hispid-puberulent on both surfaces; secondaries about 4 pairs; tertiaries transverse; pedicels to 3 cm. long, bibracteolate, 1--3 aggregated in the upper leaf-axils; calyx campanulate, inflated, externally densely hispid-puberulent, internally glabrous, the tube 8--9 mm. long, 5-lobed, the lobes lanceolate-deltoid, 6--7 mm. long, apically acute, about equaling the tube in length; corolla white, the tube cylindric, very much elongate, to 9 cm. long, slender, externally puberulent, the lobes oblong, about 1 cm. long, much shorter than the tube, apically obtuse; stamens long-exserted; filaments filiform, 4 cm. long, 1/3 to 1/2 as long as the corolla-tube; anthers oblong, obtuse; style filiform, about 11 cm. long, longer than the corolla-tube.

This species is based on *Gossweiler 2622* from "in the T'Chanas of Micange", Angola, deposited in the herbarium of the British Museum. Good (1930) cites also *Gossweiler 3643* from Angola and comments that the species "Belongs to the Section *Siphonanthus* and in foliage and habit is very near *Clerodendron cuneifolium* Baker. The flowers resemble those of *C. rotundifolium* Oliv."

Thomas (1936) cites only the type collection, but states that the species is known to him only from the original description and from this he suspects that it may be conspecific with *C. baumii* Gürke, from which he is unable to separate it in his key.

Citations: ANGOLA: *Gossweiler 2622* [Mo. Bot. Gard. photo A.837] (Go--photo of type, Ld--photo of type, N--photo of type, W--photo of type).

*CLERODENDRUM OBOVATUM* (Roxb.) Walp., Repert. Spec. Nov. 4: 112 [as "*Clerodendron*"]. 1845; Mold., Résumé 199, 267, 392, & 452. 1959.

Synonymy: *Volkameria obovata* Roxb., Hort. Beng., imp. 1, [95] nom. nud. 1814; Fl. Indica, ed. 2, imp. 1, 3: 62. 1832. *Clerodendron obovatum* Walp. apud Schau. in A. DC., Prodr. 11: 674. 1847.

Bibliography: Roxb., Hort. Beng., imp. 1, [95]. 1814; Roxb., Fl. Indica, ed. 2, imp. 1, 3: 62. 1832; Walp., Repert. Bot. Syst. 4: 101 & 112. 1845; Schau. in A. DC., Prodr. 11: 657 & 674. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106 & 503. 1858; Miq., Fl. Ned. Ind. 2: 883. 1858; Roxb., Fl. Indica, ed. 2, imp. 2, 479. 1874; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561 (1893) and imp. 1, 2: 1219. 1895; H. Hallier, Meded. Rijks Herb. Leid. 37: 40. 1918; H. J. Lam, Verbenac. Malay. Arch. 319 & 364. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 79, 110, & ix. 1921; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561 (1946) and imp. 2, 2:

1219. 1946; Mold., Résumé 199, 267, 392, & 452. 1959; Jacks in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561 (1960) and imp. 3, 2: 1219. 1960; Mold., Fifth Summ. 1: 332 & 452 (1971) and 2: 734 & 870. 1971; Roxb., Fl. Indica, ed. 2, imp. 3, 479. 1971; Mold., Phytologia 36: 41. 1977; Mold., Phytol. Mem. 2: 322, 387, & 540. 1980; Roxb., Hort. Beng., imp. 2, [95]. 1980; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 422. 1983; Mold., Phytologia 56: 126. 1984.

Roxburgh's original (1832) description of this plant is merely: "Leaves obovate, entire, coriaceous, downy beneath. Panicle terminal, decussate, downy, the extreme ramifications, lengthened, secund spikes. Calyx obscurely five-toothed. A native of the Moluccas", but apparently cultivated in the Calcutta botanical garden in Roxburgh's time (1793--1813). Miquel (1858) modifies the description to "Folia obovata integerrima coriacea subtus pubescentia; panicula terminalis decussata pubescens, ramificationibus ultimis elongatis secundifloris. calyx obsolete 5-dentatus", which is virtually a verbatim translation into Latin, probably indicating that he was not personally familiar with the plant.

Hallier (1918) was of the opinion that the Roxburgh binomial is only a synonym of what we now call *Vitex trifolia* var. *simplicifolia* Cham., and this may, indeed, prove to be the proper disposition, although the expression "secund spikes" does not seem to apply.

Lam (1919) only repeats Hallier's suggestion, but modifies the description slightly: "A shrub?; leaves obovate, entire, coriaceous, pubescent beneath; panicles terminal, pubescent; cymes decussate, uttermost branchlets 2-flowered; calyx obscurely 5-dentate".

Bakhuizen (1921) reduces the name to synonymy under *Clerodendrum serratum* (L.) Moon -- a disposal which, to me, seems most unjustified.

Nothing is known to me of this mysterious plant other than what is stated in its bibliography (above).

*CLERODENDRUM OHWII* Kanehira & Hatusima, Journ. Jap. Bot. 13: 677 [as "*Clerodendron*"]. 1937; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 133 & 183. 1949.

Synonymy: *Clerodendron ohwii* Kanehira & Hatusima, Journ. Jap. Bot. 13: 677. 1937.

Bibliography: Kanehira & Hatusima, Journ. Jap. Bot. 13: 677. 1937; Hill & Salisb., Ind. Kew. Suppl. 10: 55. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 133 & 183. 1949; Mold., Résumé 172 & 452. 1959; Mold., Fifth Summ. 1: 313 (1971) and 2: 870. 1971; Hsiao, Fl. Taiwan 4: 425 (1978) and 6: 131. 1980; Mold., Phytol. Mem. 2: 304 & 540. 1980.

Illustrations: Kanehira & Hatusima in Hatusima, Journ. Jap. Bot. 13: 678, fig. 2. 1937.

A shrub; branches subtetragonal, grayish, very shortly grayish-pubescent; branchlets subtetragonal, opposite, fuscous-tomentose; leaves decussate-opposite; petioles 2--2.5 cm. long, fuscous-tomentose; leafblades chartaceous, ovate-elliptic or elliptic to elliptic-oblong, 7--11 cm. long, 3--5 cm. wide, apically acute or acutely cuspidate, marginally entire or repand. [to be continued]